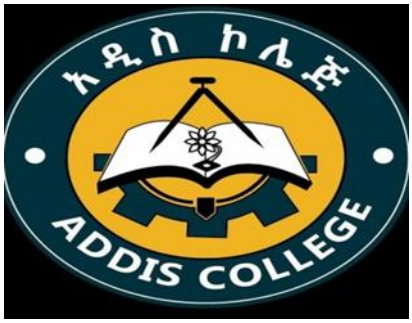



**ADDIS COLLEGE SCHOOL OF GRADUATE STUDIES**

**DEPARTMENT OF CONSTRUCTION TECHNOLOGY AND MANAGEMENT**

# Economic Impact Analysis of the Challenges and Poor Performance of Local Grade-One General Contractors in Addis Ababa, Ethiopia

**HADUSH TESFAY GEBREABZGI**

**Advisor: Bahiru Bewket Mitikie, PhD**

**A Thesis Submitted to School of Graduate Studies in Partial Fulfilment of the Requirements for the Degree of Master of Science in (Construction Technology and Management)**

**March, 2025**

**ADDIS ABABA**

**ADDIS COLLEGE SCHOOL OF GRADUATE STUDIES**

**DEPARTMENT OF CONSTRUCTION TECHNOLOGY AND MANAGEMENT**

# Economic Impact Analysis of the Challenges and Poor Performance of Local Grade One General Contractors in Addis Ababa, Ethiopia

**BY HADUSH TESFAY GEBREABZGI**

**APPROVED BY BOARD OF EXAMINERS:**

| | | |
|---|---|---|
| **Bahiru Bewket Mitikie, PhD** | | **23/07/2025** |
| **ADVISOR** | **SIGNATURE** | **DATE** |
| | | |
| **INTERNAL EXAMINOR** | **SIGNATURE** | **DATE** |
| | | |
| **EXTERNAL EXAMINOR** | **SIGNATURE** | **DATE** |
| | | |
| **CHAIRPERSON** | **SIGNATURE** | **DATE** |
| | | |
| **SCHOOL DEAN** | **SIGNATURE** | **DATE** |

# D E C L A R A T I O N

I the undersigned, declare that this thesis entitled "**Economic Impact Analysis of the Challenges and Poor Performance of Local Contractors in Ethiopia**'' is my original work and has not been presented for any other university and is not concurrently submitted in candidature of any other degree. All sources of materials used for the thesis have been duly acknowledged.

NAME: HADUSH TESFAY GEBREABZGI

ID No. GSR/002/2015

SIGNATURE: _____

ADDIS COLLEGE, SCHOOL OF GRADUATE STUDIES,
DEPARTMENT OF CONSTRUCTION TECHNOLOGY AND MANAGEMENT

DATE: 17TH March, 2025

# ACKNOWLEDGEMENT

I owe my deepest gratitude to the almighty GOD for granting me the strength, courage, and perseverance to pass various obstacles and come up to the accomplishment of this thesis. I would like to take this opportunity to express my sincere appreciation to my advisor, Dr. Bahiru Bewket Mitikie, for his exceptional guidance, supervision, and invaluable advice throughout the research process. His contributions and inspirations started in my undergraduate studies when he was my instructor, and have continued throughout my graduate studies.

I would also like to extend my gratitude to Biruk Tibebu (Instructor), Head of the school of Graduate Studies, for his constant support and assistance during my time at the college.

My heartfelt thanks go to all the respondents who participated in my questionnaire survey and those who took the time to respond to my interview requests. I deeply appreciate their contributions to this work. I am also thankful to my friends for their unwavering support during my academic journey.

Lastly, I would like to express my special appreciation to my family. Words cannot fully express how grateful I am to my uncle, Gebremariam Gebreabzgi, for his continuous encouragement and support in so many ways all the time.

# ABSTRACT

*The construction industry plays a crucial role in the economy of any country by generating employment and wealth through its forward and backward linkages with other sectors. However, local contractors in developing countries, particularly in Ethiopia, face significant challenges that hinder their performance and growth. This study focuses on assessing the economic impact of key challenges affecting local contractors in Ethiopia's construction industry. The primary objectives of this research includes analysing the challenges faced by local contractors and assess their impact on Ethiopia's economy. Additionally, the study objects to propose mechanisms for improvement and establish core performance indicators to monitor progress. The study begins by outlining a conceptual framework and categorizing the variables that impact performance, identifying the sources of detrimental factors. To achieve this purpose, descriptive and explanatory research method were applied. A mixed-methods approach was employed for data collection. Quantitative data were gathered through a questionnaire survey, while qualitative data were obtained through semi-structured interviews and observations. The findings reveal a causal relationship between independent performance challenges and the economic impacts of these challenges. Key economic impacts identified include slow infrastructure development, reduced economic competitiveness and investment, unreliable supply chains, loss of job opportunities, cultural influences and stakeholder perceptions, reduced economic growth and dependence on foreign aid. Based on the assessed core performance indicators, improvement frameworks were developed. The study concludes that effective performance measurement for local contractors and broader economic development requires the establishment of appropriate systems and the enhancement of existing practices. This includes strengthening institutions for better coordination, aligning regulatory tools, and ensuring the implementation of established policies and regulations.*

**Keywords:** ***Construction Industry in Ethiopia, Local Contractors, Challenges, Poor Contractor Performance, economic impact.***

# TABLE OF CONTENT

## Contents Page

# LIST OF TABLES

# LIST OF FIGURE

# ACRONYMS

| | |
|---|---|
| **BC** | Building Contractor |
| **BSAS** | Building Sustainability Assessment System |
| **CIC** | Construction Industry Council |
| **ECPMI** | Ethiopian Construction Project Management Institute |
| **EDC** | Ethiopian domestic contractors |
| **EEA** | Ethiopian Economic Association |
| **EI** | Economic Impact |
| **ERA** | Ethiopian Road Authority |
| **FDI** | Foreign Direct Investment |
| **GC-1** | General Contractor Grade One |
| **GDP** | Gross Domestic Product |
| **GNP** | Gross National Product |
| **GOE** | Government of Ethiopia |
| **GTP** | Growth and Transformation Plan |
| **GTP** | Growth and Transformation Plan |
| **GVPC** | Gross value of production of construction |
| **IC** | International Contractor |
| **LC** | Local Contractor |
| **LDCs** | Least Developed Countries |
| **MEDaC** | Ministry of Economic Development and Cooperation |
| **MoC** | Ministry of Construction |
| **MOWUD** | Ministry of Work and Urban Development |
| **MUDC** | Ministry of Urban Development and Construction |
| **RC** | Road Contractor |
| **rho's** | Spearman's |
| **SDPRP** | Sustainable Development and Poverty Reduction Program |
| **SMMEs** | Small, Medium, and micro Enterprises |
| **TGE** | Transitional Government of Ethiopia |
| ***UK*** | United Kingdom |
| ***UN*** | United Nations |

# CHAPTER ONE

# 1. INTRODUCTION

This chapter presents background of the study, problem statement, objectives of the research, research question, scope of the study, and its significance.

## 1.1 Background of The study

Construction industry has become an important player in the economy of both in developed and developing nations (Takim, 2005) cited by (Kassie, 2019). Undeniably, even with its ups and downs, the industry keeps on playing a vital role in supporting economic growth(Esaiyas & Kahssay, 2020). The author quoted (MUDC, 2012) indicated that the industry has important contribution to the Ethiopian economy, as demonstrated by its share in gross domestic product (i.e. 9.5% in 2016). Adnan (2004) quoted by (Al-zahrani, 2013) recognized construction industry as a main engines for growth. The UK construction industry is still economically very significant and is highly responsive to the economy and often used as a key indicator by economists (Morgan et al. 2008).

Ethiopia's formal construction sector comprises indigenous and indigenized firms, as well as numerous major foreign civil engineering and construction companies (construction proxy, 2015). Nowadays, the local contractors in construction industry is increasing from year to year. However, researchers agreed that, these local contractors involved in infrastructures development lack experience and capacity to undertake major projects see (Esaiyas & Kahssay, 2020)and(Mengistu, 2019). For this measure, the Government of Ethiopian has opened the door for foreign contractors to take part in the construction sector (construction proxy, 2015). It has become a given that most mega projects are sourced out to foreign contractors(FDRE, 2010) . The major reason to pursue overseas projects motivation were to increase profitability, to benefit competitive advantage, to expand business, to capitalize on globalization/free trade regions, to respond to project sponsor’s invitation and to gain international experience(Worku, 2016). This high involvement of FDI created high competition among local contractors to involve in development of Iskandar Malaysia(Salim et al., 2018). In contrast, as the author revised Aitken, J and Harrison, E (1999) claimed that multiple cases in developing countries shows that the admission of FDI does not give a lot of benefits to

the local companies including construction players (Salim et al., 2018). He added this lack of spillovers to local firms was attributed to limited hiring of local employees in higher level positions, very little labor mobility between domestic firms and foreign subsidiaries. Foreign companies' specially (Chinese) projects create a lot of jobs, but china often sends their workers to fill all the best positions. Hiring these firms takes dollar out of our economy; this worsens the problem of foreign currency shortage in the country(Esaiyas & Kahssay, 2020) quoted (EEA, 2008).This problem should be considered and tackle by the local authorities Aitken, J and Harrison, E (1999) cited by (Salim et al., 2018). Abate (2002) proposed affirmative action for building the capabilities of domestic contractors, quoted by (Kahsay, 2020).

Many researchers have focused on the investigations and challenges faced by micro, small, medium, and emerging contractors and enterprises((Un-Habitat 2017, Shwala 2018, (Mengistu, Ashene, & Beyene (2023), Mosisa 2013, Worku 2016)…). However, there is a noticeable gap in studies addressing the challenges encountered by large local contractors in achieving sustainable development, international competitiveness, and making a positive impact on Ethiopia's construction industry as well in the country economy.

In consideration of these reasons and all the above local firms growth hindering factors, this research intends to assess the major challenging factors that reasons for poor performance, affect the development of registered local contractors in turn affects the Ethiopia's economy, with the aim of identifying the major factors affecting local contractors' development and finally suggests measures to reduce the economic impact of those challenges.

## 1.2 Statement of The problem

Almost all Ethiopia's mega projects were taken by foreign contractors, review (Ethiopia business, February 14, 2022). For example, there were over 1300 projects being constructed by Chinese contractors in Ethiopia, up from 415 in 2011, according to liu Ye, Minster Councilor at Chinese Embassy in Ethiopia. According to Yingzheng explanation currently there are 70 Chinese contractors in Ethiopia and all of them are successful in many sectors.

But according to (construction proxy, 2015 report as of June 30, 2015, at 12:00 PM) Ethiopia has more than 135 grade one, 53 grade two, 77 grade three, 539 grade four, 1246 grade five and 1071 grade six contractors in (BC, GC and RC) are registered and working in Ethiopia's per ministry of urban Development, Housing and construction. The report added, local universities and institutes produce thousands of civil Engineers, construction managers, Architects, Electricians and Plumbers every year. In addition, According to the Ethiopian Construction Authority (ECA) report published on October 9, 2024 (G.C.), a total of 78 local Grade One general contractors, the top ten construction consulting engineering firms, and seven registered clients under various government authorities were identified.

Despite the increase in the number of private contractors and graduate professionals, as well as the economic deregulation and liberalization measures, a survey report by MEDAC (2002) suggests the capacity of the private sector to undertake big and complex construction projects is limited. Ethiopia's construction sector once delivering 20%+ growth is decelerating 5% growth in 2023 due to material shortages (cement, steel), forex constraints, and regulatory delays Ethiopian Business Review August 2023. MOWUD reported by (Amoroso & Thompson, 2006), the stock of transport infrastructure in Ethiopia (roads, rails, air- and sea-ports) is far from adequate. In 2005, the government merged urban development and construction responsibilities into the Ministry of Works and Urban Development (MoWUD). Later reorganizations changed its name to the Ministry of Urban Development and Construction (MUDC) around 2012.As of the latest 2021 Proclamation No. 1263/2021, the ministry was renamed the Ministry of Urban and Infrastructure (MUI), reflecting a broader focus that includes infrastructure alongside urban development.

Presently, many of projects are taken from these local contractors, and therefore contractors are shrinking and this will cause most of the contractors lose their job. This means that foreign companies often win such project bids(Ofori, 2009) cited (Turin 1973, Drewer 1980). The government of Ethiopia has previously launched different capacity building programs for private local construction companies to mitigate such problems and enhance their project performance and alleviate their shortage of finance. However, it was only to increase the number of the competitors in the industry (Hailemeskel, 2016). Their management and capital capacity is very limited and cannot avoid the observed challenges. The existing and old companies decline and new ones

grow up to the stage the previous ones reached(Kassie, 2019). Kassie added "There is no company being transferred to the next generation and grow as big as to be competitive one generation ahead." quoted (Daniel, 2009).In addition to these, many, if not almost all, of the privately owned construction companies (contractors) that have been established and operated in the last two decades in Ethiopia are not observed to be strong and active enough after they have reached a certain stage of development (referred here and after wards as) the decline stage (Biyadglign, 2017). The performance of EDCs is still a matter of concern(Wubet et al., 2023). Despite such interventions, the state of the local construction industry has remained poor.

The issue is not the lack of resources, but the lack of coordination to manage them in a more efficient way (Ofori, 2009). Performance constraints include inadequate capacity of local contractors and consultants, inadequate public sector delivery capacity, corruption, erratic work opportunities, use of outdated technologies and practices, lack of effective supporting policies and poor state of the economy(MUDC, 2012).Raftery et al. (1998) suggest that in the long term, the gap between local construction firms and their foreign counterparts in technology, finance and management knowhow, could be filled through technology transfer, for example, via joint ventures among the two groups of firms. This is confirmed also by (Mulu, 2018). However, several authors have mentioned the difficulties involved in technology transfer, including the tendency of foreign contractors to adopt strategies which do not support host countries' effort to develop their industries (Cockburn 1970, Wubet et al. 2024). Abbott's (1985) and Carrillo's (1994) works show that the foreign firms are not keen to effectively transfer their technology since they believe that it means they would be nurturing their future competitors. The specific problems to be addressed with regard to the challenges facing Local contractors include those related to accessing managerial training and development**,** financial institutions, policy environment: collaboration and partnerships as well as technological Innovation in the public and private sectors, as supported by the relevant similar existing studies Ntuli and (Allopi 2013, Rogerson 2008, Smit and Watkins (2012), Urban and Naidoo (2012).

Therefore, the primary focus of this research is to identify the factors that lead local contractors in Ethiopia to concur on the challenges they encounter, including training, financing, regulatory conditions, collaboration, infrastructure, and technology. These challenges are seen as contributing to their underperformance in terms of quality,

profitability, timely project completion, and sustainable growth, ultimately affecting the country's economic development.

## 1.3 Research Objectives

### 1.3.1 General Objective

The general objective of the study was to analyses the economic impact of the challenges and poor performance of local contractors in Ethiopia.

### 1.3.2 Specific Objective

To achieve the general objective, the study outlined the following specific objectives:

1. To analyze the key challenges and constraints faced by local contractors in Ethiopia.
2. To assess the economic impact of these challenges and poor contractor performance on the construction industry and the broader economy in Ethiopia.
3. To develop improving mechanisms of poor performance of local contractors.

## 1.4 Research Questions

To attain and deal with the above objectives this study will be framed by the following questions:

1. What are the key challenges faced by local contractors in Ethiopia?
2. How do the challenges and poor performance of local contractors affect the performance of construction sector and Ethiopia's economy?
3. What mechanisms can be developed to improve the performance of local contractors?

## 1.5 Scope of the Study

The study examined the construction sector, the local contractors and the economic impacts is to identify, analyze, and address the key obstacles hindering the sustainable growth of the construction industry and the economic contributions of local contractors. The research pinpoints the challenges such as limited training, financial shortages, lack of infrastructure, inadequate policies and regulatory conditions, lack of collaboration, unavailable infrastructure and inapplicable technology that impede the ability of local contractors to engage in sustainable practices and positively impact the economy. By focusing on these specific challenges, the objective is to develop targeted solutions that

promote viable development, enhance the capabilities of local contractors, and drive economic progress within Ethiopia's construction sector.

### 1.5.1 Thematic Scope

This study covered a comprehensive analysis of the challenges faced by local contractors in the construction industry. The study also delves into the implications of upgrading contractors to international competent status, the importance of practical experience and continuous education in building capacity, and the need for a culture of won contract internationally wide and expand field experience to enhance workforce qualifications. Additionally, the research involves examining the impact of local contractors in the country economy, the challenges associated with the construction sector's growth rate, and the efforts to train and graduate thousands of contractors to address industry demands and develop strategies to overcome these challenges for viable development in the construction sector.

### 1.5.2 Spatial/Geographical Scope

This study focuses on the capital city of Ethiopia, Addis Ababa. The sources primarily discuss challenges faced by local GC-1 registered in Addis Ababa, Ethiopia. Highlighting these unique challenges and find an opportunities for local contractors in Ethiopia.

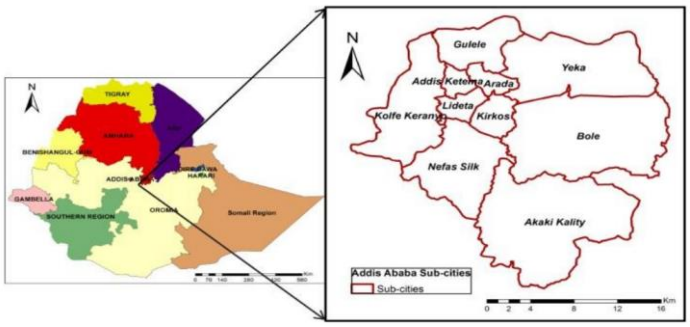



***Figure 1. 1 Location map of the study area. (Source, science direct.com)***

### 1.5.3 Temporal Scope

This study do provide information on the back history of local contractor's evolution up to current status of the construction industry in Ethiopia and the challenges faced by local contractors in the country and the need for improving the performance of local contractors. Therefore, it can be inferred that the temporal scope of this topic includes the past from the imperial regime around 1940 EC., the present and future, with a focus

on identifying the challenges faced by local contractors and develop solutions for their improvement.

## 1.6 Limitation of the Study

The topic requires extensive interdisciplinary research involving economists, diplomacy experts, engineers, clients, regulatory and the government to put forward solutions. And actually implementing the possible solutions may take years if not decades. However, limitations exist due to constraints in duration, time, knowledge, and resources. As a result, the research is delimited to focus solely on Grade-One General Contractors, with data collected through a survey conducted on a selected sample of these contractors.

## 1.7 Significance of the Study

Significance from a practical standpoint, has empirically inform decision-makers and stakeholders concerned with the issue of local contractor's loss and dominated by foreign in the Ethiopian construction sector. It provides clarity on the processes and techniques of constructing like the foreigners and serve as a reference for local professionals and interested parties in the sector. From a theoretical standpoint, the study has provides information and insights into local contractors investment result to economic benefit, particularly in the construction sector. By highlighting the outsourcing contracts to foreign influence on African economies, particularly Ethiopia, the study will contribute to theoretical discussions on challenging activities in Ethiopia and the implications for the local contractors. Overall, the study provides valuable knowledge that can aid in further research on the topic.

## 1.8 Organization of the Study

The study is organized into five chapters. Chapter One presents the introduction, including the statement of the problem, objectives, justification and significance of the study, scope, and the organization of the thesis. Chapter Two provides a review of related literature, covering theoretical perspectives, empirical evidence, and the conceptual framework of the study. Chapter Three outlines the research methodology. Chapter Four presents, analyzes, and interprets the collected data, and proposes mechanisms for improving contractors' performance. Chapter Five concludes the study with conclusions and recommendations. Finally, references, appendices, and data collection tools are included in the annex.

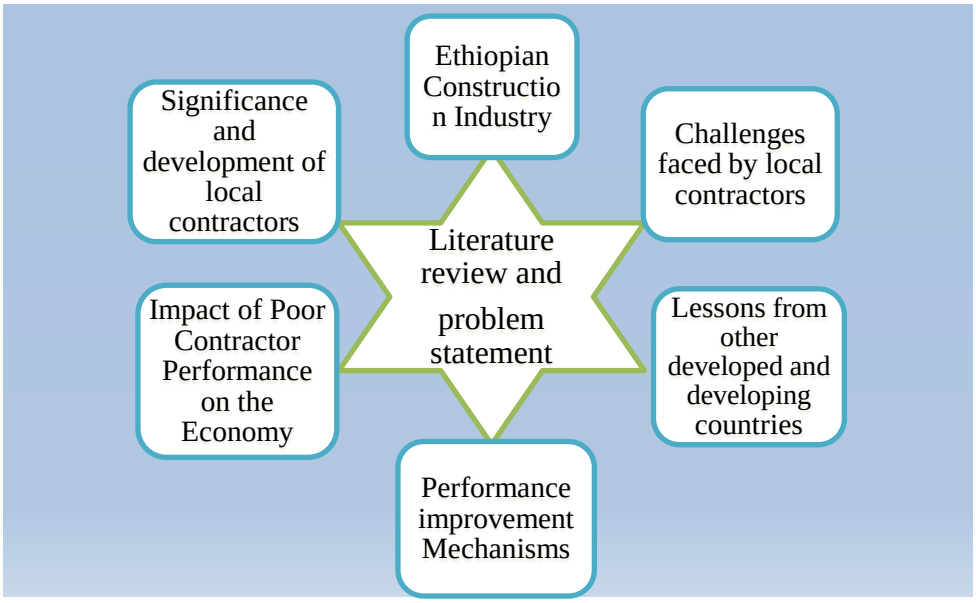
# CHAPTER TWO

# 2. LITERATURE REVIEW

## 2.1. Introduction

This chapter presents review of literature on overview of the Construction industry, significance of local contractors on the construction industry and the countries broad economy, challenge faces local contractors, the poor performance of contractors' economic impact and the mechanisms to improve the performance. The review primarily focuses on understanding the challenges leads to poor performance of contractors which impact the economy and additional literature in terms of empirical evidence of other developing and developed countries lessons are presented elsewhere in appropriate chapters.

The construction industry is a fundamental economic sector which permeates most of the other sectors as it transforms various resources into constructed physical economic and social infrastructure necessary for socio-economic development(MUDC, 2012). This has embarked on a long-term development strategy which aims at achieving sustainable human development with all pre-requisites for a middle income country by the year 2025. Served as largest employer in Ethiopia providing full-time and part time job opportunities for millions of people (Adam, 2022). MOWUD cited (*UN*,1996) quoted by (Amoroso & Thompson, 2006) defined construction as an economic activity directed to the creation, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature, and other such engineering constructions as roads, bridges, dams, etc. Since it has a major role to play in achieving social economic development objectives of any country; local firms and professionals should be fully involved in the process. There have been a number of initiatives geared towards fostering the local construction industry report since 2005 (MUDC, 2012). Fig. 2.1 below describes the main areas covered by literature review.




***Source: Developed from the reviewed literatures (2025)***

**Figure 2. 1 Main areas of literature review**

## 2.2. Ethiopian Construction Industry

### 2.2.1 Development History of Ethiopian Construction Industry

The construction sector in Ethiopia, generally in the world, contributes to the realization of about fifty percent of the total capital. This being the second largest employer in the country, it's also an engine for technology, innovation and overall development. In the past history of Ethiopia, the construction industry was not considered as an independent sector of the national economy. This, in turn, has led to the undesirable features of the current construction sector such that inadequate relevant local construction regulations and standards, and inadequate consideration given to the use of local resources (including community participation in labor-based works(Tecle & Mahelet, 2009) quoted (ERA, 2000). MOWUD(2007) quoted by(Esaiyas & Kahssay, 2020)and(Amoroso & Thompson, 2006), stated evolution of modern construction industry in Ethiopia is a recent phenomenon and can generally be summarized into four distinct periods (MEDaC, 1999).

The first period covers the period prior to the year 1968 when most civil works (including roads) were carried out by foreign contractors through international competitive bids. Relevant skilled manpower was also largely employed from abroad. The second era in the development of the construction industry in Ethiopia was that

spanning the period 1968 -1982 when some small domestic contractors started to emerge.

**Table 2. 1** ***Contractors/Public enterprises list during the period 1940*** **- 1982**

| No | Contractors/ Public enterprises | Remark |
|---|---|---|
| 1 | BERTA Construction Company | |
| 2 | National engineers and contractors (NEC) and the | |
| 3 | Ethiopian building road construction (ETBRC) | |
| 4 | Imperial Highway Authority (IHA) in 1951 | By now the Ethiopian Construction Works Corporation establishment on December 18, 2015 |
| 5 | Ethiopian Water Works Construction enterprise traced back starting with an American aid project named "Point Four" in 1948 | |
| 6 | Ethiopian Prefabricated Building Parts Production Enterprise was established in the 1980s | |

***Source: ERA: Domestic Construction Industry Study, 2000***

The third period in the evolution of the industry was the period of the Derg regime which had brought the then evolving domestic private construction companies under state control in 1982. The fourth period begins from the time the EPRDF-led transitional government of Ethiopia took power in May 1991. Economic management has shifted from command to a free market system and various reform measures aimed at promoting the private sector including private construction companies have been introduced. EEA (2008) quoted by (Berhanu, 2009), as a result the role of private has started flourishing while that of public companies diminishing since 1991. Following the government transformation, the number of private contractors published up to the period 2005/06 were increased to 2671.

***Table 2. 2 Number of registered and renewed contractors, by 2005/06***

| Grade | Number of registered Contractors up to 2005/06 | | | | | Number of renewed Contractors up to 2005/06 | | | | Capacity |
|---|---|---|---|---|---|---|---|---|---|---|
| | BC | GC | RC | Total | | BC | GC | RC | Total | |
| 1-2 | 27 | 27 | 2 | 56 | | 21 | 25 | 2 | 48 | > 15 million Birr |
| 3-4 | 121 | 16 | 2 | 139 | | 98 | 8 | 1 | 107 | >5 & <=15 million |
| 5-10 | 944 | 1527 | 5 | 2476 | | 474 | 988 | 2 | 1464 | <=5 million Birr |
| Total | 1092 | 1570 | 9 | 2671 | | 593 | 1021 | 5 | 1619 | |

***Source:*** ***Report on Ethiopian Economic*** **(Amoroso & Thompson, 2006)** ***(MOWUD)***

The recent two decades are the period that the industry has drastically changed (Anshebo, 2017). Not only a steady growth in number of engineering projects financed locally, but the contribution of foreign financing agencies also increased (Girmay, 2003).

Considering the importance of their involvement, and contribution to the Ethiopian construction industry the government has encouraged foreign firms to engage (Getahun, 2016).The new Government 1991, introduced policy measures that led to the revival of the participation of the private sector in the construction industry.(Didibhuku & Jacob, 2009) stated that the larger contractors have responded by moving into the international market. This contributes to evolve 40 local GC-1 registered and working in Ethiopia's per ministry of urban Development, Housing and construction (construction proxy, 2015). According to (top construction company, May 24, 2022) top construction company in Ethiopia have more than thousands of employees have under them. Nowadays "Top local contractors in Ethiopia have a history of engaging in international construction projects, contributing to the growth and development of the construction industry within and outside the country (Yemane, 2024)." Moreover, around 23,000 contractors were operating in the sector by 2021, yet many slowed due to public sector payment delays and material bottlenecks resulting in over budget and delayed projects (Ethiopian Business Review, August 2024).

### 2.2.2 Role of Construction Industry in Economic Development

**Contribution to National Economy**

Construction is one of the largest industries and contributes to about 10% of the gross national product (GNP) in industrialized countries (Navon,2005) as cited by(Kassie, 2019)and (Ofori, 2009). For example, percentage share of the construction sector to (GDP) has increased from 4.3% in 1993 E.C to 5.8% by 2009/10 E.C(MUDC, 2012), about 5.2% in the period 2002/03- 2006/07 study by (Amoroso & Thompson, 2006) cited (MOWUD), MUDC cited by (Esaiyas & Kahssay, 2020) (i.e. 9.5% in 2016)and accordingly, *MoFED)* the economy grew on average at 11 % per annum. Over this period, there has been increased investment on the development and expansion of various infrastructure projects like roads, airports and residential and non-residential housing units. This was achieving towards the country's Growth and Transformation Plan (GTP). Adnan (2004) cited by (Al-zahrani, 2013) recognized that the construction industry has an important role as one of the main engines for growth.

**Contribution to employment**

The role of the construction industry in terms of creating employment opportunities especially in urban areas is becoming visible. According to the 1999 Labour Force Survey (LFS), of the total employed 25 million, 0.9 percent was estimated to be in the construction industry(Amoroso & Thompson, 2006) quoted (MOWUD,2007). According to the 2005 LFS, of the total employed 31.4 million, 1.4 percent was estimated to be in the construction industry. The author in his review included that, In March 2007, "Unemployment Challenges and Prospects" being its thematic issue. For this report, the Current State of the construction industry has been chosen to be the thematic issue. Construction proxy (2015 reported as millions of employees working under the local companies. Pearce (2003) and Akadiri (2011) cited by (Al-zahrani, 2013)the significance of the UK construction industry in employment are the number of firms, output and employment. During the last 2016 GTP period alone, the city administration has created 482,078 permanent and 248,824 temporary jobs or a total of 730,902 jobs, according to the Addis Ababa Development Agency (2016) quoted by (Un-Habitat, 2017).

**Contribution to government revenue**

MOWUD(2007) quoted by (Amoroso & Thompson, 2006) demonstrated contribution to economic activity through generation of revenue for government from corporate income taxes of companies, the rental income, sales tax, capital gain tax and employees' income tax from industry, which in turn goes to the employed in the construction financing of public services such as schools and health institutions among others. For instant the rental income tax which was Birr 15.2 million in 1997/98 has increased to Birr 78.3 million in 2004/05 but lowered to Birr 32 million in 2005/06 generating nearly half a percentage point of the total government revenue in the period 1997/98- 2005/06. This is adapted since the developmental state paradigm (Shumuye, 2015). But this does not mean that the economic growth recorded yet is enough rather further efforts would require. CI Requires the potential to enhance economic sustainability through its structure, conduct and performance(Ofori, 2009). Roads are essential to a country's economic and social development(Regassa, 2015). They form vital links between production centers and markets, providing access to employment, social and health services and education makes.

### 2.2.3 Overall Construction Industry Policy Directions

Over the years, Ethiopia's construction industry has faced challenges loaded with unrest, considerable delays on some of the country's major construction projects, as well as recent setbacks in the economic and political situation. Ethiopia is a country at work, and this is can be witnessed by the construction sites located everywhere one turns (Yemane 2024). It emphasizes the importance of balancing infrastructure development with environmental conservation to ensure long-term sustainability. Policies are being reassessed to address sustainability concerns and align with global standards to promote climate-resilient infrastructure Wondimu Seta on the Reporter (2024). The attainment of the Construction Industry Policy goals and objectives requires the implementation of mutually reinforcing policy directions(MUDC, 2012).

## 2.3 Local Construction Companies and the Development

According to the Guidelines issued by the MoWUD there are four categories of contractors. Of these categories, General Contractors is considered for the envisaged project profile. This consideration is made on the basis of the scope of the all-encompassing nature of the category and the indication of the market study conducted. GC-1 can undertake any or a combination of all these types of works of unlimited contract value.

**Table 2. 3 Number of licensed contractors by grade level in 2008**

| Grade | Building Contractor | | Road Contractor | | General Contractor | | Specialized Contractor | | Total Contractors | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No | % | No | % | No | % | No | % |
| Grade 1 | 224 | 4.32 | 7 | 7.53 | 93 | 1.14 | - | - | 324 | 2.39 |
| Grade 2 | 20 | 0.39 | - | - | 8 | 0.01 | - | - | 28 | 0.21 |
| Grade 3 | 298 | 5.74 | 12 | 12.9 | 85 | 1.04 | - | - | 395 | 2.91 |
| Grade 4 | 443 | 8.54 | 18 | 19.35 | 53 | 0.65 | - | - | 514 | 3.79 |
| Grade 5 | 1,029 | 19.84 | 5 | 5.38 | 420 | 5.16 | 49 | 36.3 | 1,503 | 11.09 |
| Grade 6 | 921 | 17.75 | 15 | 16.13 | 2,885 | 35.44 | 12 | 8.89 | 3,833 | 28.27 |
| Grade 7 | 987 | 19.02 | 22 | 23.66 | 2,501 | 30.72 | 16 | 11.85 | 3,526 | 26.01 |
| Grade 8 | 936 | 18.04 | 9 | 9.68 | 1,812 | 22.26 | 33 | 24.44 | 2,790 | 20.58 |
| Grade 9 | 306 | 5.9 | - | - | 252 | 3.1 | 6 | 4.44 | 564 | 4.16 |
| Grade 10 | 25 | 0.48 | 5 | 5.38 | 31 | 0.38 | 19 | 14.08 | 80 | 0.59 |
| Total | 5,189 | 100.02 | 93 | 100.01 | 8,140 | 99.9 | 135 | 100 | 13,557 | 100 |

***Source: Bureau of Addis Ababa Trade and Industry Development, 2008(Unpublished)***

Despite the increase in the number of private contractors since the economic deregulation and liberalization measures, MEDAC (2008) survey suggests the capacity

of the private sector to undertake big and complex construction projects is limited. Such type of complex construction projects is therefore contracted out to foreign-based construction contractors. MEDAC (2008) estimated that during the year 2008, an additional 30 high grade contractors are required which will grow to 324 by the year 2015 and 665 by the year 2020.

Therefore, efforts are being made to upskill local contractors to enhance their capabilities and performance. This benefits of local contractor development has two dimensions, i.e., considering them as an incubator for future larger international companies and job creation mechanism(Esaiyas & Kahssay, 2020). As directed by (Tshikhudo, 2016), considering local contractors as job creation mechanism only can result in proliferation of many local contractors. Hence, sustainable development of local contractors can be characterized by acceptable level of attribution and reasonable pace of growth, i.e., transition to the next category of developed in to international contractors (Bajracharya et al., 2018) cited by (Esaiyas & Kahssay, 2020). This focus is essential on upskilling local contractors for fostering a skilled workforce, improving project efficiency.

## 2.4. Common challenges Faced by Local Contractors in Developing countries

The construction industry everywhere faces problems and challenges. However, these difficulties and challenges in the developing countries are present alongside a general situation of socio-economic stress, chronic resource shortages, institutional weaknesses and a general inability to deal with the key issues (Qin & Ofori, 2000). Pakistani international contractors, shows that inaccessible market information is identified as critical external barriers, whereas start-up cost and communication issues are identified as internal critical barriers faced by these contractors(Maqsoom et al., 2016). Internal challenges are associated with management practice, financial capacity, and technical capacity, the external challenges are ineffective policy support and regulation, week registration practice, and demand and price fluctuation(Mengistu et al., 2023). The major institutional challenges facing contractor development are regulatory framework, limited training institutions, management know-how, lack of drive to learn, timely payment to contractors by clients, procurement expertise, absence of reliable credit facilities, absence of equipment pools, corruption syndrome, limited research and information, and occupational health and safety concerns(Kiggundu 1999, Assefa, 2014, Wubet et al. 2024, Mosissa 2013, Shwala 2018) and (Didibhuku & Jacob, 2009). Major challenges

are related to time, cost, quality, client; integration of stakeholders, financial capacity, project management skill, availability of resources, political and social factors and others Chan, Scott & Chan (2004),see (Kassie, 2019) review. Similarly, institutional problems in the developing world include inadequate skills and personnel, poor monitoring, corruption, lack of coordination, lack of political will and limited public awareness of the concept of sustainability, and inadequate legislative frameworks(Ofori, 2009). The other factor like equipment/material failure, managerial inadequacy, and lack of training, lack of communication and departures of qualified staff are high risk level in term of quality(Mitikie et al., 2017). Recurring factors affecting Ethiopian CI developments are policy implementation and corruption from role of government, weak capacity of contractors and consultants from resource related variables, Lack of collaboration and professionalism from nature of the industry and lack of benchmarking construction industry development practice from industry's vision for development(Mengistu, 2019), and (Desta, 2015).

Recent trends also indicate that the governance structure of the industry has been changing. (MoC) was established in 2015 as a central statutory body dedicated to construction industry development, separated from MUDC (FDRE, 2015); however, in 2018 it was merged back to MUDC. Such dynamism in the governance structure, various readjustments of the regulatory authorities and institutes, create difficulty in achieving continual development of the industry. (ECPMI) was established in the same year, with the objective of facilitating development of the industry through building project management capacity of the key stakeholders (FDRE, 2013). Construction Industry Council (CIC) was established in 2017 with the general objective of creating a stakeholders forum which would engage in developing and facilitating practical implementation of policies, programs, laws and strategic issues that would lead to an efficient CI. Ethiopian CI has not been assessed comprehensively to a level that enables one to understand the industry (EEA, 2008).

Different studies have been conducted majorly focusing on project and some organization level issues. The studies conducted indicate poor performance in different aspects of performance measures: time, cost, quality (Kifle 2013, Haile 2016, Anshebo 2017, Tagesse 2017, (Dereje & Mengesha 2023), management practice related (Yimam 2011, Desta 2017, Sinesilassie et al. 2017), corruption (Plummer, 2012), applicable standards (general conditions) (Gezahegne, 2011) and weak capacity of the organizations

(Mustefa, 2015). According to Mengesha (2004, 2016), the factors contributing to low performance of public projects in the country are policy, capacity, attitude and force majeure related issues. In Ethiopia, the most challenging factors affecting local contractors' performance in Chinese building projects were financial constraints, information exchange problems, cultural differences, unfamiliarity with Chinese work methodology and project complexity (Esaiyas & Kahssay, 2020). In Vietnam has strongly committed to implementing sustainable development goals, and individuals, and businesses, especially construction contractors, play an important role in achieving the goals that overall(Kifle, 2013; Linh, 2023).

In developing the construction industry, there are eight key factors currently active and having strength(Paul, 2013). These are: Industry-led better practice and culture; Financial resources and investor confidence; Human skills and culture of transparency; Government policies and strategies supporting construction business; Research and development for construction; Self-reliant construction culture; Institutional support; and Supportive attitudes from aid agencies. The major internal factors causes of construction company failures in Malaysia are: Delay in collecting payments from clients (donors); Closure; Depending on banks and paying high profits; Lack of capitals; Cash flow management; Lack of experience in the line of work; Absence of construction regulations; Low margins of profit due to competition; Awarding contracts to the lowest price; and Lack of experience in contracts(Enshassi et al., 2006, Bedada 2023, Kifle 2013 , Salim et al. 2018). This is remarked also by (Hareru et al., 2016). Unskilled and problematic workers will not only cause the delay in project completion but also poor quality of works(Hamid et al., 2011). Research conducted in Case on Debre Markos University Construction Projects remarked that the top five most important and highly ranked factors are erroneous time estimates, force majeure, lowest bid, procurement policy, and volatile markets, as well as frequent design changes(Demissew & Abiy, 2023) .

According to Faridi and El-Sayegh (2006) study statement shortage of skills of manpower, poor supervision and poor site management, unsuitable leadership, shortage and breakdown of equipment among others contribute to construction delays and cost overrun in the United Arab Emirates.

The World Bank in their procurement of audit of Ghana, the World Bank (1996, 2003), Westring (1997) and Crown Agents (1998) have continuously reported documentary

evidence of contracts taking very lengthy periods to reach financial closure and also, often subjected to unnecessary delays, poor coordination and communication structures, fiscal constraints and extensive systems of controls and land ownership disputes see (Kifle, 2013) review.

**Knowledge and Skills/High TurnOver**

Not applying existing knowledge in new or progressing constructions has both time and cost implications. Therefore, systematic way of knowledge flow and experience sharing both at individual and company level has to grow well (Bezawork et al. 2020, Haile 2022, Anshebo et.al. (2022). Common causes for the failure of construction organizations are human capital issues, macroeconomic issues, adaptation to market conditions and budget issues (Wong & Ng, 2010) cited by (Mengistu et al., 2023)and about 80% of the problems experienced **(**Van Aardt et al. (2008:249). The lack of skills and experience at both supervisor and worker levels has, however, also been a contributing factor to poor performance as cited by (Shwala, 2018). The number of available Skilled and semi-skilled labor in construction is very low, particularly, given the size of the population and the demand(Amoroso & Thompson, 2006) quoted (MOWUD).The quality of the project affected by labour poor productivity is very high(Mitikie et al., 2017).

**Financial Constraints/ and access to credit**

Access to finance is a challenge which limits financial capacity of the MSEs (Tshikhudo, 2016) cited by (Mengistu et al., 2023). Lack of supportive institutional mechanisms in terms of financial credit facilities, equipment for hire and professional development hampering the performance and development(MUDC 2012, Shwala 2018) cited Baitani and Mullungu (2007:9). Study in the construction industry of Limpopo Province in South Africa found that 122 of the 229 emerging contractors (53.28%) were viable financially while the remaining 107 emerging contractors (46.72%) were not viable financially(Worku, 2016). Developing countries financial resource is not available as the engineering profession is virtually nonexistent, contractors have very limited financial resources and the government budgets are unable to meet the requirements. One of the major challenges would be to develop financing mechanisms that enable and encourage the use of sustainable technologies and level the playing field for local contractors(Ofori,

2009). To make things worse small-scale contractors are less motivated to execute their task due to less access to finance, insufficient profit and long payment processing(Gemeda, 2003) and(Ofori, 2009).

**Policy Environment/ Regulatory Framework**

The presence of supportive policies and regulations that promote sustainable building practices can influence the decisions and actions of local contractors towards implementing environmentally sustainable solutions in their construction projects (MUDC, 2012).government policies related variables and resources play a crucial role in shaping the industry's development trajectory (Mengistu & Mahesh, 2020), (Anshebo et al., 2022). According (ERA,2000)cited by(Tecle & Mahelet, 2009) the construction industry is being given special focus in the policies of the country. The combination of economic and regulatory measures by which sustainable construction can be encouraged would be difficult to implement in the developing world(Ofori, 2009). This is because of the absence of the necessary government and private institutions to facilitate the process.

The productivity of the construction industry in Nigeria is very low compared with other industries(Anny et al., 2015). This situation has been attributed to the fragmented approach commonly adopted in the delivery of construction projects and does not effectively encourage the integration, coordination and communication between participants in the construction industry. Construction projects fail with a disproportionately high frequency in Ethiopia's construction industry today because it is fragmented and highly subject to political and economic cycles(Bedada, 2023).

**Resources**

Problems of local contractors in developing countries are lack of qualified manpower, limited access to working capital, shortage of materials, machinery, and poor utilization of the modern technologies (Mengistu et al., 2023) qouted (Hillebrandt 1999, IGC 2012), Ofori (2002:1) cited by (Shwala, 2018)and (Didibhuku & Jacob, 2009). Insufficient domestic human and organizational capacity for infrastructure development has led to a dependency on foreign capacity, which has in turn undermined the pace and coverage of infrastructure delivery(FDRE, 2010).

**Collaboration and Partnerships**

Encouraging collaboration between local contractors, government agencies, universities, and international organizations can facilitate knowledge sharing, technology transfer, and

best practices in sustainable construction, fostering a supportive ecosystem for sustainable development initiatives (Mengistu et al., 2023). As a result, the institution suffered from poor public relations and a high cost of supervision and contract administration (6.87% of the overall project cost) (Demissew & Abiy, 2023). In principle, contractual investments are higher in partner- ships with suppliers(Trunk & Birkel, 2022). However, the precise combination of contractual and relational investments depends on the business model, and the allocation of power within the supply chain.

**Technological Innovation**

Embracing innovative technologies and green building solutions can enhance the sustainability performance of local contractors, but the availability and affordability of these technologies can impact their adoption. greater use of IT (Schwegler et al 2001, Becerik (2004) )see(Kassie, 2019)review. Low productivity and quality low technological base hampering the performance and development of the industry (MUDC, 2012). Developed a tool focusing on enhancing the sustainability practices of contractors that considers the triple bottom line sustainability with inadequate resources and wasteful uses Anshebo et al. (2022) cited by (Mengistu et al., 2023). Insufficient IT management practices among local contractors can impede the adoption of innovative and sustainable construction techniques, affecting the overall sustainability of building projects in Ethiopia(Gashaw et al., 2023) cited by (Mengistu et al., 2023). (IT) has enabled the globalization of the economy and facilitated competition (Mosisa, 2013) cited Sun and Howard (2004).

**Fluctuations in material prices and supply chain issues**

In developing countries the private sector has a very narrow market base and the formal construction industry overly relies on the government for work. However, government construction orders fluctuate with income, especially multilateral and unilateral financial assistance, which often facilitate the foreign exchange devoted to imports, including construction materials(Ofori, 2009).

**Management and technical capabilities**

The business failures in the CI is high and this is not because contractors do not know the techniques of construction but rather they have not developed their management skills(Abraham, 2008) cited (Copare 1990, MUDC 2012, Haile, 2022). Poor

management in African countries arises from the fact that most owners lack managerial expertise (Tshikhudo 2011, Muriithi (2017) cited by (Mengistu et al., 2023). More than half of the contractors in Limpopo Province, South Africa had disadvantaged backgrounds in terms of technical and entrepreneurial skills as well as capital and access to finance(Worku, 2016). Cost, time, and quality and leadership performance problem is one of the major problems in Oromia building construction projects(Yada & Yadeta, 2021). The degree of professionalism of construction workforce at the projects is low (Reta, 2020). This implies that most of the projects workforce who is under the contractors is nonprofessional(Gemeda, 2003).

**Training and mentoring International**

Training as communication directed at a defined population for the purpose of developing skills, modifying behavior and increasing competence(Shwala, 2018) . Similarly, (Moss 2007, Chilipunde (2014:144)) observed that training is a form of education or teaching that transfers knowledge.

**Organizations' capacity**

Construction organizations' capacity enhancement is among the determinant factors ((Ofori 1980, C21 1999, CIRC 2001) cited by (Mengistu et al., 2023)and (Kumaraswamy, 2006). The potential challenges of local contractors can be categorized into internal and external. These are associated with the different capacity dimensions: management practices, financial capacity, and technical capacity and are affected by different external factors (Bajracharya et al., 2018), and (Tang & Ogunlana, 2003) cited by (Mengistu et al., 2023). As result contractor development programme must be needed(Ofori, 1999). Study found 139 of the 229 emerging contractors in the construction industry of Limpopo Province, South Africa selected (60.70%) lacked entrepreneurial skills by the standards of Beck and Demirguc-Kunt (2012) quoted by (Worku, 2016). Since a number of registered local firms have in the country, there are very few high capacity contractors (1-2). This calls for appropriate measures that strengthen the financial, technical and managerial capacities of domestic contractors so as to enable them to become competitive in the market(Amoroso & Thompson, 2006) quoted (MOWUD,2007). This lack of capacity is a factor both of the number of human resources and the skills levels of these resources(Ofori, 2009). Among the several factors contribute to the limited participation of domestic contractors in the road sector is the

poor performance(Wubet et al., 2023). This hinders to complete projects as specified in contracts (MOFED 2014, ERA 2016, Koshe and Jha 2016, Siraw 2016,Zewdu 2016, AfDB 2018). That is, projects awarded to local contractors are characterized by excessive delays (Koshe and Jha 2016, Zewdu 2016, Siraw 2016), and substantial cost overrun (Nega 2008, Zewdu and Getachew 2015). Out of 25 factors, the top five most are Delay in land acquisition, Lack of cost planning, Shifting of existing utilities, slow decision-making by owners, and Payment delays by owner(Tadewos et al., 2018). The other is the overall limited capacity of domestic contractors to meet the bidding requirements in mega road projects.

**Payments delays from clients and excessive change orders**

Emerging contractors experience problems due to lack of payments by clients (Mvubu and Thwala (2009:4) cited by (Shwala, 2018), which often forces them to delay or suspend work is the public sector being the main defaulter in this respect. Contractors may lose money, time, and a positive brand image as a result of project delays(Demissew & Abiy 2023), Abraham 2008, Ofori, 2009).

**Infrastructure availability and Job Opportunities Access**

Access to job opportunities has a significant contribution to the survival of a construction companies(Shwala, 2018). This is basically ensuring by Government role(FDRE, 2010). However, once contractors have completed a project they usually have to wait for some time before receiving the next project Mbonane (2005:16). (MUDC, 2012), Inadequate and erratic work opportunities, low public investment in infrastructure projects and over dependence on donor funding hampering the performance and development of the industry.

**Corruption and bureaucratic delays**

Corruption and financial mismanagement in public/private sectors hampering the performance and development of the industry (MUDC 2012, Muriithi 2017) cited by (Mengistu et al., 2023). The Transparency International of UK, said "The construction sector was generally perceived as the most corrupt industry in the world" (Anny et al., 2015).

**Register of Contractors**

Of the total registered contractors about 2671 contractors in 2005/06, only 1619(60.6 percent) have renewed their licenses in 2005/06. This shows that the number of active

contractors is only 60.6 percent of the total contractors registered at MOWUD(2007) quoted by (Amoroso & Thompson, 2006). Those contractors who did not renew their licenses for the year 2005/06 may have totally gone out of business or have failed to meet some requirements.

**Equipment and technology**

Lack of supportive institutional mechanisms, equipment for hire hampering the performance and development of the industry (MUDC, 2012). Lack of equipment, ability to foresee technological adoptions to maintain reputability was confirmed (Mengistu et al., 2023) in his study. MOWUD(2007) quoted by (Amoroso & Thompson, 2006), demonstrated out of the total machinery and equipment registered, only 54.2 percent are 10 years and less while the balance are aged 11 to 50 years (Table 9.1).

**Procurement system**

Inappropriate contract packaging of works which favor foreign firms in donor funded projects, inefficient and non-transparent procurement Systems Corruption and financial mismanagement in public/private sectors hampering the performance and development of the industry (MUDC, 2012). The CI in many parts of the world started to grow with an increasing demand (Tecle, 2009). Thus, there is a dire need for a coherent and efficient law to deal with such contractual relationships. (Al-zahrani, 2013) stated the most heavily weighted criteria for a contractor's appointment is the lowest bid price. Most developing country governments favor large turnkey projects and "build, operate, and transfer" projects. Among the problems associated with these procurement systems is the fact that only large companies are able to participate effectively. This means that foreign companies often win such project bids(Ofori, 2009).

**Environmental related factors**

Poor working environment, including low standards of safety and occupational hazards on construction sites hampering the performance and development of the industry. Further investigation is also needed regarding the environmental impact and health threats(Ofori, 2009).

**Inadequate planning**

Studies undertaken by the World Bank (Auerhan, 1985) highlighted the cause of lack of resource management and planning within the education system. Contractors fail to

submit preparation and implementation of work program as per the time specified in the contract and get approval from the consultant(Nigussie, 2015).

**Design process**

Incompetent designers/contractors, poor estimation and change management, social and technological issues, site related issues and improper techniques and tools(Kifle, 2013) cited Long et al (2004) arises performance problem. Table 2.4.1 below summarise the challenges faced construction industry and local contractors in different countries by different Authors.

***Table 2. 4*** **Summary of Common challenges faced by LC in developing countries**

| Country | Author | Concerned study on | Variables/Challenges identified |
|---|---|---|---|
| Ethiopia | (Mengistu et al., 2023) | MSEs development Challenges | Internal challenges are<br>Management practice,<br>Financial capacity,<br>Technical capacity, and<br>External challenges are<br>Ineffective policy support and regulation,<br>Week registration practice, and<br>Demand and price fluctuation |
| Ethiopia | Assefa (2014) | MSEs development Challenges | Collateral challenges;<br>Marketing challenges;<br>Wrorking space constraints;<br>Capital goods and machinery challenges;<br>Licensing and registration challenges;<br>Attitudinal challenges; and<br>Institutional coordination problem. |
| Ethiopia | Mosissa (2013) | MSEs development Challenges | Lack of finance,<br>Limited skills in construction management, and<br>Prevalence of unethical conduct |
| Ethiopia | (Mitikie et al., 2017) | High risk level in term of quality. | Equipment/material failure,<br>Managerial inadequacy, and<br>Lack of training,<br>Lack of communication and<br>Departures of qualified staff are |
| Ethiopia | (MENGISTU, 2019) | Construction industry factors | Policy implementation and corruption<br>Capacity of contractors and consultants<br>Collaboration and professionalism<br>Lack of benchmarking construction<br>Regulatory authorities and institutes dynamism |
| Ethiopia | (Esaiyas & Kahssay, 2020) | Challenging factors affecting local contractors' working with China | Financial constraints,<br>Information exchange problems,<br>Cultural differences,<br>Unfamiliarity with Chinese work methodology and<br>Project complexity with RII( Relative Importance Index). |

| | | | |
|---|---|---|---|
| Ghana and Malawi | Dalitso and Peter (2000) | MSEs development Challenges | Lack of entrepreneurial and<br>Business management skill and training<br>Lack of access to finance<br>Lack of access to appropriate technology<br>Regulations and rules; and<br>Weak institutional capacity |
| Gaza | Chan, Scott & Chan (2004) | Construction project delay | Access to finance<br>Integration of stakeholders,<br>Financial capacity,<br>Project management skill,<br>Availability of resources,<br>Political and social factors |
| South Africa | Didibhuku, Jacob & Phaladi, (2009), (Shwala, 2018) | MSEs development Challenges | Inadequate finance and inability to get credit from suppliers;<br>Iability to employ competent workers;<br>Poor pricing, tendering, and contract documentation skills;<br>Poor mentoring;<br>Fronting for established contractors; .<br>Lack of entrepreneurial skills;<br>Lack of proper training;<br>Lack of resources for either large or complex construction work;<br>Lack of technical, financial, contractual, and Managerial skills; and<br>Late payment for the work done |
| | (Ofori, 2009) | Institutional problems in the developing world | Inadequate skills and personnel,<br>Poor monitoring,<br>Corruption,<br>Lack of coordination,<br>Lack of political will and<br>Limited public awareness of the concept of sustainability, and<br>Inadequate legislative frameworks. |
| Vietnam | (Linh, 2023) | Contractors face risks and challenges | War,<br>Frozen markets,<br>Supply disruption, and<br>Rising inflation |
| Gibraltar | (Paul , 2013) | Construction industry | Industry-led better practice and culture;<br>Financial resources and investor confidence;<br>Human skills and culture of transparency;<br>Government policies and strategies supporting construction business;<br>Research and development for construction;<br>Self-reliant construction culture;<br>Institutional support; and<br>Supportive attitudes from aid agencies. |
| Malaysia | (Salim et al., 2018) | Causes of construction company failures | Delay in collecting payments from clients (donors);<br>Closure;<br>Depending on banks and paying high profits;.<br>Lack of capitals;<br>Cash flow management;<br>Lack of experience in the line of work; |

| | | | |
|---|---|---|---|
| | | | Absence of construction regulations;<br>Low margins of profit due to competition;<br>Awarding contracts to the lowest price; and<br>Lack of experience in contracts |
| United Arab Emirates. | Faridi and El-Sayegh (2006) | Construction delays and cost overrun | Skills of manpower,<br>Poor supervision and<br>Poor site management,<br>Unsuitable leadership,<br>Shortage and breakdown of equipment |
| Ghana | World Bank (1996, 2003), | Construction delays and cost overrun | Financial<br>Poor coordination and communication structures,<br>Fiscal constraints and extensive systems of controls and<br>Land ownership disputes |

***Source: Developed from the reviewed literatures (2025)***

## 2.5 Impact of Poor Contractor Performance on the Economy

Usually, Performance is measured based on Quality, cost, schedule, and safety. Although it is difficult to finish construction projects within the exact timeframe, minimizing delay is necessary. Because it results in additional cost, it reduces profit to be earned by companies(Haile, 2022). Performance is the accomplishment of a given building construction projects against the contractual cost, time and quality standards (Yada & Yadeta 2021, Ofori 2009) and(Bhandari et al., 2018). Even though construction in Mekelle city Ethiopia is shows fast growing in recent years, it faced by different challenges that retards from complete on time and on budget and quality(Tadewos et al., 2018). "Harmony with local cultural and spiritual values" it often conflicts with the values held by the non-industrialised countries (Ofori, 2009). International construction projects performance is affected by more complex and dynamic factors than domestic projects; (Ofori 2009,Kassie 2019) cited Kim et al (2008). local companies have limited capacity to adapt and recognize new technology and art of management skills from big multinationals foreign companies Blalock & Gertler (2009) as reviewed by (Salim et al., 2018) . This is one of the factors that reduce local contractors' competition to involve in FDI projects. In case of Iskandar Malaysia Development, many researchers found out that at developing countries, FDI ownership may influence the effects and tendency of local companies' sourcing Liang (2017). The author revised Azhar et.al (2008), that throughout a project management life cycle, cost is the most considerable and prime factor of success. However, it is common to see often the project is finished with over budget(Mitikie et al., 2017). Cost overrun and delay are one of the major challenges

being faced by the construction and infrastructure sector (Melaku et al., 2021). He also concluded that incompetence was the major cause of construction business failures ranging from 37% in 1972 to approximately 57% in 1987 Al-zahrani cited Russell (1991). Construction industry has become an important player in the economy of both in developed and developing nations (Takim, 2005) cited by (Kassie, 2019) .

**Cost overruns and reduced profitability**

The broadly published problem in different literature related to construction project management is project cost overrun(Belachew et al., 2017). Efforts to promote SMME access to finance might have more impact on development and growth but access is limited and the cost of capital is high see (Didibhuku & Jacob, 2009) review. Most of them are characterized by time delay, cost overrun and poor quality construction mainly because of poor performance of the contractor(Gemeda, 2003) and (Mustefa, 2015).

**Project delays and failures to meet schedules**

Success of a construction project is a fundamental issue to most governments, users and communities(Al-zahrani, 2013). This because of delays in payment, which are common with government contracts (Croswell and McCutcheon, 2001) see (Didibhuku & Jacob, 2009) review. Delays in construction projects are the major causes of project failure(Hareru et al., 2016) and (Ofori, 2009). Projects are desirable to be completed within the time frame and budgeted cost(H/Gebriel, 2004).

**Competition and Cost**

Local contractors are also involved in those projects via a subcontracting strategy(Esaiyas & Kahssay, 2020). However, it is not easy for local contractors to succeed by working with their foreign counterparts who have massive international experience and capacity. The shortage of such high level expertise domestically has been costing the country huge scarce foreign exchange see the (Amoroso & Thompson 2006, Dereje & Mengesha 2023)study. The higher impact of (FDI) created high competition among local contractors to involve in development of Iskandar Malaysia(Salim et al., 2018).

**Growth and development**

There is a perception that globalisation is a one-way flow of exports from the industrialized countries to developing ones. A study of the top 30 international construction firms during 1990-1999 revealed that 58 contractors were listed at least

once among the top 30 Engineering News Record (ENR) contractors during the period (ENR, 1990 to 1999). US contractors had the highest number listed: (14, or 24%) followed by Japan (9, or 16%), France (8, or 14%) UK (6, or 10%). Several authors predict that construction firms from developing countries will play an increasingly greater role in the global market in future see, for example, (Hassan et al., 1998). The majority of the population in sub-Saharan Africa have little or no access to potable water, decent shelter, and health and education services(Zawdie & Langford, 2020). The persistence of this problem is closely associated with the absence of sustainable infrastructure facilities and the prevalence, inter alia, of low indigenous construction capacity in the region.

### 2.5.1. Ripple Effects on the Broader Economy through Reduced Investment, Employment and Output

The challenge, as Ofori (1993) suggests, is that the construction industry should do well despite the severe constraints in its operating environment. The BRI projects' negative side is that there are many countries that have had trouble paying back China's massive loans(Bharti, 2023). The country was in critical political, social, and economic situation when the current government took power from the socialist/military government(Shumuye, 2015). The country was suffering in the command economy closed its door for external market; i.e. the living situation both in urban and rural areas was severe. Following are the most common effects of these poor performance:

**Quality issues in construction projects.**

Badly performing construction products also reduce the quality of life of those using these products. A first step towards sustainable construction is to improve the quality of construction products and the efficiency and safety of the construction process.

**Dependency**

Over reliance on foreign contractors may hinder the capacity building and skill development of local construction companies, potentially impeding their long-term sustainability and growth. Through time are not well established in the industrial sector(Ofori, 1999) such help by government should not create much dependency and it should be monitored and adjusted as the context changes. Organizations should continually review and utilize opportunities to improve their success (Abraham, 2003) cited by (Mengistu et al., 2023). The number of construction reform initiatives over the

last 60 years, mostly in the developed countries, aimed at reforming the domestic construction industry, and equipping it to be globally competitive(Van & Llewellyn, 2006). Although these studies contain a wealth of knowledge, they are prepared in the context of circumstances unique to developed countries.

**Cultural and Communication Challenges**

It has been found that every organization has a culture which is determined by its history, size, corporate goals and objectives, technology of production, market, and operating environment (Handy 1985, Rwelamila et al, 2000, Hofstede 1980 cited by (Ofori, 2009).

**Limited Market Access**

(Linh, 2023), stated that with the difficult situation of the construction industry when it is affected by political conflicts, supply source disruptions, and the frozen real estate market, lack of work, material prices increased, etc. The main causes of current construction project failure are High neglect in free market and lack of experience in contract management(Bedada, 2023). Table 2.8 below Summarises the challenges resulted to Poor Contractor Performance impact in the Economy.

***Table 2. 5 Summary of Impact of Poor Contractor Performance in the Economy***

| Impact | Authors |
|---|---|
| Cost overruns and reduced profitability | (Al-zahrani 2013, Poon et al. 1999, Egan 1998, Didibhuku & Jacob, 2009, Belay et al., 202, Al-zahrani cited Russell (1991); Faridi and El-Sayegh 2006, Haile 2022) |
| Quality | (Bhandari et al., 2018) |
| Cultural and Communication | (Ofori, 2009, Kassie 2019) |
| Competition and Cost | (Esaiyas & Kahssay 2020, Salim et al., 2018, Blalock & Gertler2009, Cockburn1970, Carrillo's 1994) |
| Unemployment | (Amoroso & Thompson 2006, Ofori 1993) |
| Dependence | (Mengistu et al. 2023, Ofori 1999, Rwelamila et al 2000) |
| Limited Market Access | (Linh, 2023) |

***Source: Developed from the reviewed literatures (2025)***

## 2.6 Performance Improvement Mechanisms Review

In order to realise tangible results in terms of improvements in the performance of, and prospects for, the construction industry, several other issues require attention(Ofori, 2009). Ways while it is an encouraging step, the formation of a construction industry development agency is only the beginning of a long process. This implies that its plans, policies, initiatives, procedures and communication channels should be continually reviewed and fine-tuned or radically restructured where necessary (Ofori 1993, (Miles and Neale 1991, Al-zahrani 2013,Belay et al. 2017).A construction company's decision to expand into international markets must be based on a good understanding of the opportunities and threats associated with international business, as well as the development of company strengths relative to international activities (Luger, 1997) cited by (Didibhuku & Jacob, 2009).

**Working conditions**

Work sites should become advertisements for the industry(Kassie, 2019)**.** It is not a very big step to provide workers with uniform, proper ablution facilities and rest room areas, health and safety record of construction is perhaps the second worst of any industry. Construction companies have clear and transparent wage, bonus, and welfare policies (Linh, 2023).

**Financial needs**

To increase the financial resources available, emphasis will be given to improving the level of domestic savings and foreign exchange savings through promoting import substitution of imported materials and construction services with domestic products and services(FDRE, 2010).

**Training and Education needs**

Studies undertaken by the World Bank (Auerhan, 1985) highlighted that Training of construction personnel at all levels from engineers and construction mangers to artisans and labor is one of the primary functions of the support framework. Right skills are required to be improved to improve productivity Anthony (2007) cited by (Kassie, 2019). Training hours are on the rise, and companies are increasingly turning to online learning to empower their employees, allowing for greater autonomy and cost savings related to commuting and facility expenses (Hoa 2023, Hung 2023, Ricons 2023) cited by (Linh, 2023),in Vietnam. Mentorship affords selected contractors, who are awarded

contractors in term of the programme (Watermeyer, 2001:6) as cited by (Shwala, 2018). Problem is not only one of scarcity of skilled personnel at all levels but also of major deficiencies at the managerial level. (Kifle, 2013) and (FDRE, 2010). Systematic and sustained improvement effort requires knowledge of where the current status of the practice is, where desired to go, and the gap between the two(Kurniawati, 2017). For sustainable construction projects, one may wonder if there is one dominant style of management represented by construction companies (Górecki et al., 2022). This showed by as success factors for construction completion(Belay et al., 2017).

**Communications Management Project**

The method by which formal messages are identified, created, reviewed and communicated within a project (Martyn and Hills, 2008). Implementation strategies here refer to enhancement of skills and knowledge of the implementing agencies and agents, public participation for transformational reform(FDRE, 2010). Effective communication, fast information transfer between project participants, the better selection and training managers, detailed construction programs can help to accelerate the performance (Kifle, 2013) cited Chan and Kumaraswamy (2002).

**Technology needs**

Appropriate technologies to developing countries and support sustainable construction, requires the collection of specific data assessment under benchmarking (Ofori, 2009). This has applied by sort out the culture first, following improving processes and then applying technology as a tool to support these cultural and process changes (Smith & Edgar, 2009) see (Kassie, 2019) review. According to Tan et al (2011) reviewed by (Linh, 2023), applying technology and innovation in construction is one of the criteria for sustainable construction. Some tools used by contractors include: Building Information Modeling (BIM), E-learning and Developing Benchmarking as stated by (Kifle, 2013).

**Relationships needs**

Partnering aims to develop a closer relationship between parties of a project and achieve a win-win outcome (Griffiths, 1992). Wood and (Ellis, 2004) reported that as a means of improving project performance, partnering represents the most significant development to date. Experience sharing between different administrative levels will be strengthened and the participation of stakeholders in the reform process enhanced(FDRE, 2010).

Partnerships between the public and private sectors is claimed to provide a wide variety of benefits to the public sector and to the private sector participants(Adnan, 2014).

**Risk management needs**

Project performance and construction management practices has improved through risk assessment which in turn led to low ratings of schedule impact of certain risk drivers as the study conducted in US (Mohame, 2012)) see (Kifle, 2013) review. Strengthens financial management and risk management to minimize liquidity risks(Linh, 2023) cited Tracodi. Al-though construction risk management literature is very rich in conceptual frame(Mitikie et al., 2017), construction project has no routine practices employed to manage risks.

**Past experience / lessons learnt**

(Al-zahrani, 2013) cited Chouduary et al. (2009) define post project evaluation as a "process through which an organisation looks at the activities carried out, to avoid mistakes in the future and also to learn from successes and failures". The author continued that the term 'lessons learnt' has also appeared in the Project Management Body of Knowledge (PMBOK) (Project Management Institute, 1996). According to de Wit (1988) post-construction evaluation to identify what went right and what went wrong is proven to be a valuable exercise in construction projects.

**Procurement procedures**

Procurement methods have been subjected to considerable transformation from lowest cost to best value procurement (Oyegoke et al. 2009) quoted by (Al-zahrani, 2013). Another form of procurement that is increasingly being used on construction projects in the UK is partnering (Black et al. 2000). This form is an arrangement between two parties (client and contractor or contractor and sub-contractor) (Mathews et al. 1996). Al-zahrani cited Wong et al. (2000) asserted that multi-criteria practice in the contractor appointment process is needed rather than the 'lowest-price wins'. To ensure a reasonable market share for the local industry, pre-qualifying contractors in terms of a contractor registration system to the granting of preferences for indigenous contractors (Amoroso & Thompson, 2006) quoted (MOWUD,2007).

**Regulatory environment/ Government Policies**

The legislation and enforcement of a regulatory framework that ensure safety and competitiveness in the industry is also considered crucial to GTP (FDRE, 2010). The problems arising from this variable does not arise from a lack of adequate legal provisions, but rather from a lack of the ability to enforce their compliance(Anny et al., 2015). An economic framework study has needed to effect of macroeconomic changes in the level of interaction between countries and their effects on construction(Paul, 2013) cited Barton's 1988. By including sustainability criteria into the procurement policies and procedures of all large clients, including government, an enabling environment for sustainable construction, as well as a market for sustainable construction products, is created(Ofori, 2009). Evaluation is vital for achieving project goals (Beshah et al., 2024). Moreover, the construction sector often uses inconsistent criteria, causing ineffective project evaluation.

**Efficient Resource Management**

Agencies that very often use the term "sustainable development" for promoting activities that remain essentially based on an unsustainable development model that is polluting the ecosystem, increasing inequity and social exclusion, and consuming resources at a rate faster than nature can replace them(Ofori, 2009). Concern over the impacts of construction activity on the environment and measures have been put into practice to mitigate them(Baloi, 2003)and (Linh, 2023). They also plan, monitor, and control equipment to avoid damage that could lead to significant cost losses (MUDC, 2012).

**Table 2. 6 Summary by performance improvement mechanisms and by author**

| Performance improvement requirements | Author |
|---|---|
| Plans, policies, initiatives, procedures and communication channels should be continually reviewed | (Ofori, 2009, Ofori 1993,Miles and Neale 1991). |
| Major success factor for construction | (Al-zahrani, 2013) |
| Project mission, top management support, project schedules, client consultation, personnel recruitment, technical tasks, client acceptance, monitoring and feedback, communication and trouble-shooting, characteristics of the project team leader, power and politics, environmental effects and urgency | (Belay et al., 2017) |
| Financial and human resources | (FDRE, 2010) |
| Domestic savings | |
| Create jobs, develop the sector's overall capacity | |
| Certification of non-skilled and semi-skilled manpower, Promote the introduction of new contractors and consultants, Build the capacity of companies leasing plant and equipment | |
| comprehensive capacity building program | |

| | |
|---|---|
| Proper use of manuals, procedures and checklists and adherence to regulations | |
| Good understanding of the opportunities<br>development of company strengths<br>Track record, specialist expertise and project management capability<br>Increased long term profitability, the ability to maintain shareholders' returns, and the globalisation and openness of the markets | (Didibhuku& Jacob , 2009) |
| Strengthening the existing institutions<br>Aligning the applicable regulatory tools<br>Establishing some implementation systems | (MENGISTU, 2019) |
| Long-term vision and policy for the industry;<br>Basic resources and infrastructure (physical and institutional);<br>Financial and human resources;<br>Thinking the best and behaving the best (a better practice culture);<br>A learning culture; and<br>Techniques and technologies supporting high production performance. | (Paul, 2013) |
| Working conditions | (Kassie, 2019) |
| Financial needs | (FDRE, 2010)<br>(Paul, 2013)<br>(Linh, 2023) |
| Training needs | (Kassie 2019, Belay et al. 2017),<br>(Anthony 2007, Linh, 2023)<br>(Shwala 2018, FDRE 2010)<br>(Górecki et al., 2022, Kifle 2013) |
| Communications Management Project | (Martyn and Hills, 2008).<br>Westland, 2006) see (Kassie, 2019)<br>(FDRE, 2010)<br>(Kifle, 2013) |
| Technology needs | (Kifle 2013, Kassie 2019, Ofori 2009,Linh 2023)<br>(Tan et al. 2011),Mulu 2018)<br>Hoa Binh (2022) |
| Relationships needs | |
| Risk management | (Al-zahrani, 2013, Griffiths 1992,Chan et al. 2003,Ellis 2004)<br>(Mohamed 2012) see (Kifle, 2013, Linh 2023, Mitikie et al. 2017). |
| Past experience / lessons learnt | (Al-zahrani, 2013) cited Chouduary et al. (2009) & Wit (1988) |

| | |
|---|---|
| Procurement procedures | (Al-zahrani, 2013, Wong et al. 2000, Amoroso & Thompson 2006, MOWUD 2007, Anny et al. 2015, Dereje & Mengesha 2023). |
| Regulatory environment/ Government Policies | (FDRE 2010, Ofori 2009, Anny et al. 2015, Paul 2013,Dereje & Mengesha 2023) |
| Efficient Resource Management | (Ofori 2009, Linh 2023, Baloi 2003, FDRE 2010, Hung 2023) |

***Source: Developed from the reviewed literatures (2025)***

## 2.7 Lessons from Other Developing Countries

Developing countries has the same CI institutional requirements like developed countries (Larcher, 1998). The primary stakeholders are also the same however; the 'balance of power' is significantly different to that in developed countries. In developing countries the client is predominately the government while in developed countries the client can often be from the private sector. Finally, in developed countries, the majority of contract administration work is undertaken by consulting engineering firms(Van & Llewellyn, 2006). Al-Omari's literature review as cited by (Paul, 2013), grouped as such of the following list of the developing and developed countries for his study.

| **Developing countries** | **Developed countries** |
|---|---|
| Ghana | Sweden |
| Kenya, Tanzania & Cuba | UK |
| Gibralta | Hong Kong |
| Sri Lanka | European Countries |
| Abu Dhabi | Canada, Japan & USA |
| China | Australia |
| Jordan | France & UK |

***Source: Al-Omari's literature review as cited by (Paul, 2013)***

In developing countries, the consulting profession is almost nonexistent in developing and emerging countries. Experience from China, Japan and South Korea shows that emerging and newly established construction firms need a lot of support from the state as a means of creating a vibrant construction sector in Limpopo Province (Hyun et.al. 2011, Lee & Kim 2010 cited by (Worku, 2016). China's economy has matured with real GDP growth dropping from 14.2% in 2007 to 6.6% in 2018. That is why the Chinese external affairs policy has been involving the expansion of China's Belt and Road Initiative (BRI) across the continental level to accelerate economic growth see (Bharti, 2023). The Chinese government need to transform from a selective industrial policy to a functional industrial policy(Huang, 2022). To pursue large Indonesian contractors overseas

projects was motivated by multiple-motivations rather than a single one. An implication of these findings is that the existing condition of the companies should be taken into consideration when measuring companies' motivation levels in pursuing overseas projects (Worku, 2016). Similarly, Yang Malaysia stated that due to the development is now be developed by foreign developers, it caused problems to local contractors due to limited tender from government projects quoted by (Salim et al., 2018). Nearly 1 million construction workers are needed every year and majority of them are foreigner(Hamid et al., 2011). It was found that 20% of the jobs are being occupied by foreign workers. This problem should be considered and tackle by the local authorities Aitken, J and Harrison, E (1999) cited by (Salim et al., 2018). Though developed country contractors occupy major share in the international markets, a number of developing country contractors are increasing expanding their overseas operations. There has been very little variety of market entry modes adopted by these contractors and barriers faced by them while expanding overseas(Maqsoom et al., 2016).Research conducted by (Shwala, 2018)**,**in South Africa construction companies owned and managed by historically disadvantaged individuals, which have not yet succeeded in developing into major companies. Study conducted in Mozambique by (Shen and Tam, 2002) in Hong-Kong, concluded that construction contractors considered sustainable construction practices as inevitably leading to extra costs and resources and thus unlikely to attract their interest(Baloi, 2003).

In order to develop the capacity of domestic private contractors in Ethiopia providing construction services 752 new contractors were given licenses, Financial support and training, Capacity building services for 147 experts, and provided with training(FDRE, 2010). Permits to import machineries with long term payment modalities were awarded to increase the supply of construction machineries and address transportation problems. Lessons from developing countries for instant for improving mechanism, many authors implicated the system the countries they take action were visible improved outcome see table 2.7.1 below.

**Table 2. 7 Lessons from developing countries for performance improving mechanisms**

| Countries | Author | Mechanism |
|---|---|---|

| | | |
|---|---|---|
| China | (Bharti, 2023) | Chinese external affairs policy has been involving the expansion of China's Belt and Road Initiative (BRI) across the continental level that can get construction projects to their local contractors to accelerate economic growth. |
| Indonesia | (Worku, 2016) | To pursue large Indonesian contractors, overseas projects was motivated by multiple-motivations rather than a single one. |
| Malaysia | (Salim et al., 2018) | With a large amount of investment, it provides job opportunities for local contractors. |
| Vietnam | (Linh, 2023) | Training hours are on the rise, and companies are increasingly turning to online learning to empower their employees, allowing for greater autonomy and cost savings related to commuting and facility expenses. |
| South Africa | (Shwala, 2018) | An affirmative policy in South Africa to support the changed environment and socio-economic objectives of government was developed, which in turn led to a development of targeted procurement policy. |
| in Kenya | (Kifle, 2013) | The National Construction Company, established by the government in 1967 to assist African contractors by obtaining work for them, giving them advice and training, and providing them with finance . |
| In Ethiopia | (Kassie, 2019) | The Ethiopian Roads Authority has a Training and Testing Branch which gives courses to upgrade workers and supervisors. |
| | (FDRE, 2010) | In order to develop the capacity of domestic private contractors providing construction services 752 new contractors were given licenses and provided with training, Financial support and training were provided to these construction companies to enhance their capacity. |

***Source: Developed from the reviewed literatures (2025)***

## 2.8 Lessons from Developed Countries

The construction industry, by nature, has many special problems and requirements. The importance of taking measures to improve the performance of the construction industry has now been recognized in several countries at various levels of socio-economic development. Hence a number of countries at different levels of development have recently formulated long-term plans for improving their construction industries (Ofori, 2009).These include:

In the Australia (Australian Procurement and Construction Council, 1997), Hong Kong, (Singapore Construction 21 Steering Committee) and the UK construction task force (Latham, 1994) and Egan rethinking construction (1998)). Following the Latham and the Egan reports, the construction industry has developed its own set of Key performance indicator to measure its performance. In projecting change for the critical Australian construction industry, the CRC (committee) for Construction Innovation envisions a culture of self-improvement through applied research and technology transfer(Hampson, 2005). In the UK**,** (Al-zahrani, 2013) reviewed (The Simon Committee (1944) Report,

Banwell report (1964), Latham Report (1994) and Egan Report (1998)**)** several construction reports start with the Simon Committee report of 1944 and conclude with the 1998 Rethinking Construction (Egan) report in UK as the next section; and found that the improvement of performance in the industry was the main objective of such changes (Murray & Langford, 2003). The initiative in Singapore, which has a successful construction industry development agency (formed in 1984 originally as the Construction Industry and Development Board, which became the Building and Construction Authority in 1999) is a good example of such efforts(Ofori, 2009).

Lessons from developed countries for instant for improving mechanism, the study implicated the system the countries they take action were visible improved outcome see table 2.8.1 below.

**Table 2. 8 Lessons from developed countries for their improving mechanisms of poor performance**

| Countries | Author | Mechanism |
|---|---|---|
| Australia | (Ofori, 2009) | Australian Procurement and Construction Council, 1997 |
| | (Al-zahrani, 2013) | Technical planning and controlling expertise of a contractor is key in achieving project success |
| Hong Kong | (Ofori, 2009) | formulated long-term plans for improving their construction industries |
| Singapore | (Ofori, 2009) | Construction 21 Steering Committee( formed in 1984) , representing the main segments of the industry was appointed, with terms of reference |
| Singapore 2003 | (Kassie, 2019) cited Goh (2005) | General administration, design, project management, site management were enhanced by using of IT |
| UK | (Latham, 1994)<br>(Egan, 1998)<br>(Al-zahrani, 2013) | Construction task force and<br>Rethinking construction<br>Simon Committee report of 1944<br>Banwell report (1964)<br>Latham Report (1994)<br>Egan Report (1998)<br>These authors found that the improvement of performance in the industry was the main objective of such changes |

***Source: Developed from the reviewed literatures (2025)***

## 2.9 Empirical Evidence from Previous Study

### 2.9.1 Poor Performance Empirical Evidence from Previous Study

The large number of stakeholders such as clients, contractors, consultants, regulators bodies and others makes the CI complex. Local construction industries have the lions

share in market opportunities in developed countries (MUDC, 2012). However, for least developed countries, it is dominated by Foreign Service providers to the tune of at least 65% in terms of money value of market share. For example, in the Southern Africa, local contractors and consultants have approximately 30% market share in the region; Malawi (23%), Swaziland (35%), Tanzania (20%), South Africa (85%). In Ethiopia foreign contractors and consultants account for major proportions of the market share in road sector (about 58% in terms of value) but nearly 100% is executed by local contractors as far as building is concerned. Sustainable, As detailed in the 19-year performance assessment report (ERA, 2016) cited by (Wubet et al., 2023) , 599 road construction contracts were funded from 1997 to 2015 worth Ethiopian Birr (ETB) 180.5 billion (> $20 bl). Among these, 476 (79%) projects were awarded to Ethiopian domestic contractors (EDCs) with a value of ETB 82.7bl (45% of the total contract amount), while the remaining 123 projects worth ETB 102.8bl (55%) were awarded to foreign contractors. Further, of the 83 different projects, worth ETB 63.65bl, implemented in collaboration with development partners (World Bank, African Development Bank, European Union, China Exim Bank, etc.), only three projects with a total value of ETB 0.60bl (1%) were awarded to EDCs. This coincides as (UNECA, 2015) reported that in most African countries domestic sector construction companies have difficulty competing with large international organizations - even in their own markets. The practice of international contracting in Ethiopian construction industry covers the period prior to the year 1968 (EEA, 2008) quoted by (Esaiyas & Kahssay, 2020). Iskandar Malaysia, Region Development Authority (IRDA) has awarded a total of RM 1.52 billion or 76% of the contract value of infrastructure projects to Bumiputera local contractors since 2006 (Salim et al., 2018).

Russell et al. (1992) in UK cited by (Al-zahrani, 2013), the industry evaluation of the perceived impact of 20 decision factors and 67 sub-factors for contractor prequalification across 78 public owners, 72 private owners and 42 construction managers. Al-zahrani, stated that three major criteria for making decisions across the owners in all three categories were: financial stability, experience and past performance. However, a contractor's ability to perform the work could face negative changes due to bankruptcy or poor business practices quoted (Isik et al. 2009, Ibukun et al. 2010, Varun et al. 2011).

### 2.9.2. Evidence on the Economic Impact of Poor Contractor Performance

The Construction Gross Value of Production GVPC, at constant market price increased from Birr 7.6 billion in 1996/97 to Birr 18.9 billion in 2006/07 depicting an average annual growth of 9.6 percent over the period (MOWUD,2007) cited by (Amoroso & Thompson, 2006). The author added that the share of construction (GVP), which was 59.6 percent in 1996/97 has increased to 74.2 percent in 2002/03, though it marginally declined in recent years to about 68.4 percent in the year 2006/07 averaging at 66.9 percent for the whole period. Whereas the share of operational Foreign Construction Investor (FDI) in the total (GVPC) averaged about birr 159.0 million i.e., 1.7 percent per annum during 1996/97-2001/02 has increased to Birr 289.8 million during the period from 2002/03 – 2006/07.The result from the report indicated that the domestic construction companies were faced by high competition, since the introduction of free market policy in Ethiopia in 1992, some foreign investors have shown interest to invest in the country, though their relative share on aggregate remained very low at the start and later increased investment flow resulted to decreasing domestic contribution during the period 2002/03 – 2006/07.During the period 1997/98 -2005/06, the total number of supervisors involved in the road sub sector service has been 138 of which 100 were domestic supervisors while the remaining balance were foreigners. Although the number of domestic supervisors has accounted for about 72.5 percent of the total number of supervisors in the road construction, the financial payment that was effected to domestic supervisors was only 27.5 percent. So, the lion's share of the payment for road construction supervision work went to foreign supervisors.

According to a survey conducted by MOTI, the demand for cement in the country in 2005/06 was estimated at about 4.7 million tons whereas the production of cement was 2.7 million tons, the gap being 2 million tons. This indicates that the gap must have been bridged by import since otherwise construction projects which were unable to get cement would have been forced to postpone their construction activities to future years with cost implications.

The unit value of iron bar total value of iron bar /total quantity imported) has increased from Birr 2.71 in 2000 to about Birr 6.33 in 2007 thereby depicting a 133.6 percentage point increase over the period. The increase in both the volume of iron bar and its price

has serious foreign exchange implications on a foreign exchange constrained country, like Ethiopia.

Ethiopia is the second from the last followed by Mozambique which indicates that the management practice in Ethiopia is even far behind from those poor performing developing countries in Africa(Ayalew et al., 2016). The magnitude of cost overrun among selected project extended from 4.16% to 83.2%. While the average magnitude of cost overrun was nearly 21.52%, this is a significant amount when it compared with the number of projects(Belachew et al., 2017). The performance of the local contractors was revealed that the relative contributions of the employer, contractor, government, and others to the time overrun were found to be 54%, 21%, 14 %, and 11% respectively(H/Gebriel, 2004). It has been found that the performances of the projects under consideration were unsatisfactory with an average of 33.87% of cost overrun (H/Gebriel, 2004)domestic construction firms are facing today in our country.

### 2.9.3. Comparison with Challenges Faced by Local Contractors in Other Developing Countries

Kassie, 2019 have showed in his review that the findings of study on cost and time overrun in Malaysian construction industry revealed that 92% of construction projects were overrun and only 8% of project could achieve completion within contract duration.

The situation seems to be worse in India where studies on construction projects, found that more than 60% of projects experienced up to 200% time overrun and 750% cost overrun (Rwakarehe and Mfinanga, 2014). Most of these challenges are also observed in many African developing countries such as Nigeria, Kenya, Ghana, Uganda and Tanzania. Rwakarehe and Mfinanga (2014) in Tanzania found out that total cost and time overrun rates on average to be 44% and 26% respectively by considering seven projects. The author further identified that among other factors the average contribution of inadequate design to be 26% and 32% respectively and the extent to which inadequate design contributes, as a percentage, to cost and time overruns was 61% and 85% respectively.

The case in Ghanaian construction industry as it is highlighted by Ofori (2012) has also several of the characteristics of construction industries in developing countries. The Nigerian construction industry is also still struggling with a lot of intrinsic challenges, ranging from inadequate technical and managerial know-how to insufficient financial,

material and equipment capital base (Isa et al, 2013). The case in Kenya is also not different with other most of African countries. Lots of challenges such as the expenditure exceeding the budget, delay to complete the project in time, the building defects and over-reliance on foreign workers (Gwaya et al, 2014).

Chimwaso (2000) in his study in Botswana on the other hand investigated that seven out of ten public projects had reported cost overruns and the factors that influence cost overruns have been identified and ranked in order of significance. He also cited a recent study in which only 16% of the projects were considered successful (i.e. completed on time, within budget, and to specification). Rwelamila (2002), estimates show that foreign contractors and consultants hold 70 percent of the construction market in the Southern African Region as an example(Mosisa, 2013). The market share of Zambian contractors in road construction projects is a mere 17 percent; the rest is in the hands of foreign contractors. The Zambian experience highlights the critical role that government and other industry stakeholders should play in assisting contractor development.

Sustainable development should be one of the goals in the development strategy of businesses to survive and achieve success in Vietnam(Linh, 2023). However, according to set of criteria for evaluating the sustainable development of businesses, 63% of the criteria belong to legal compliance. Therefore, implementing sustainable development of businesses will be easier.

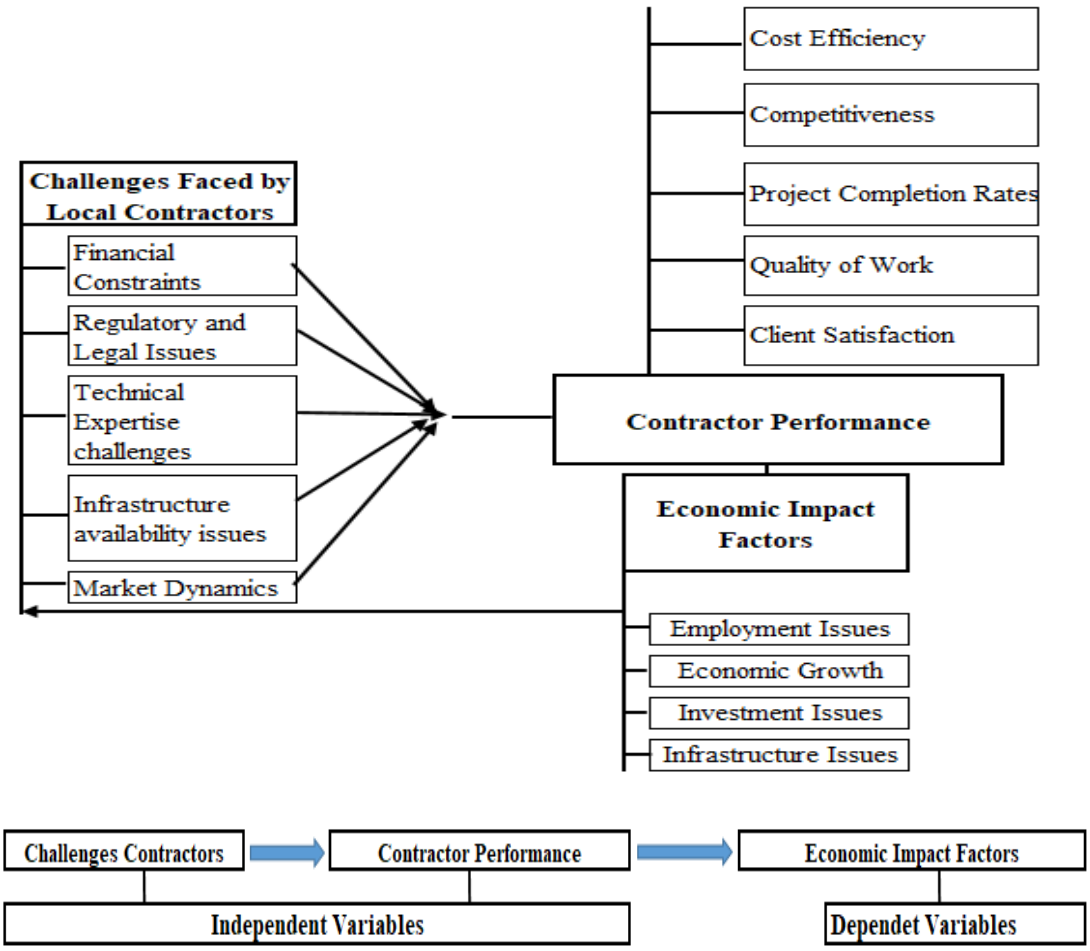
## 2.10 Conceptual Framework

Conceptual frame work is to show conceptual distinctions, processes or thoughts and organize the ideas in the study. Strong conceptual frameworks should capture the concepts in the study in a way that is real and easy to remember and apply (Tobin & Brainard, 1998) cited by (Haile 2022, Mengistu 2019).

This section presents a framework on relationships of the research constructs that serve as general framework for data collection, analysis and discussion of the results. This study summarizes the relationships of the challenging factors and interrelationships between the factors, poor performance variables and the economic impact (EI). This framework in general helps to improve the poor performance and positively impact the economic. Improvement of the poor performance factors is aggregate of improvement of the challenging factors and those two issues result to impact the economic improvement. For example, cost efficiency and competitiveness in capacity could be improved by

improving contractors financial access, technical expertise, regulatory and legal issue, infrastructure availability and improve the market dynamics in the industry. The performance variables come from different challenge and as the economic impact variables share the performance variables, they share the challenge too. Hence, to better understand the relationships and identify challenges of the contractor, conceptual frame wise classification was adopted.

The poor performance variables are categorized into five groups based on their presumed challenging sources .(i) cost efficiency, (ii) competitiveness, (iii) project completion rates, (iv) quality of work and client satisfaction. Similarly the presumed effect of those two issues, comes in to the classification of variables of the economic impact resulted to lay into four groups: (i) arise employment issues, (ii) economic factor (iii) investment issues and (iv) and infrastructure issues. The performance variables are dependent on the state of challenges of others basically, because the improvement of one challenge would improve the others. The determinants are mutually dependent because the effect of one often depends on the state of others (Porter 1990, Flanagan et al. 2005) as cited by(Mengistu, 2019). Hence, the foreword arrow indicates the linear relationship of the next to the challenging factors and the same is as goes the arrow to backward process, i.e. the positive economy impacts to improve the challenges resulted to poor performance of the local contractors.




***Source: Developed from the reviewed literatures (2025)***

***Figure 2. 2 Conceptual Framework of the Challenges and Forward for the Improvement***

This conceptual framework provides a structured approach to researching the economic impact of challenges and poor performance among local contractors in Ethiopia. By following this framework, to systematically explore the issues, analyze their effects, and develop actionable recommendations see Figure 2.2.

The local contractor contributes to national development through its contribution to Gross Domestic Product (GDP), backward linkages to other industrial sectors, direct demand for labor and contribution to national capital formation (ILO 1987). It affects and is affected by the economy (Hillebrandt, 1985) and there is a cyclic relationship between them (Ofori 1980) cited by (Mengistu, 2019).

Based on the presumed sources of problem this analysis employs five performance and four economic theories to understand the challenges faced by local contractors in Ethiopia and their implications for economic performance. The challenges and poor performance of local contractors in Ethiopia can be analyzed through the lenses of

performance theory. Addressing these challenging issues through targeted investments in it, implementing effective performance measurement systems can significantly improve the performance of local contractors and contribute to economic growth in the region.

## 2.11. Summary of the Chapter

The construction industry is a critical component of Ethiopia's economy, contributing significantly to GDP and employment. However, the sector faces numerous challenges, particularly concerning the performance of local contractors in Ethiopia are reported to struggle with various issues, including financial constraints, inadequate skills, regulatory hurdles, and infrastructure and market dynamisms. These challenges result in project delays, cost overruns, and compromised quality, which in turn, negatively impact the overall economy. This research outlines a study to analyze these issues and their economic implications. As addressed the key challenges, the poor performance variables and the impact on economic variables in the literature review, in the next chapters will proposing actionable solutions, to enhance the efficiency and effectiveness of the contractor in the construction industry, thereby contributing to economic growth and development.

## 2.12. Gap of the Literature

While numerous studies have extensively examined the challenges faced by micro, small, and medium contractors in Ethiopia's construction sector particularly in areas such as capacity limitations, financing, and regulatory hurdles, there is a noticeable gap in the literature regarding the specific challenges encountered by large local (Grade-1) contractors. Existing research tends to generalize construction sector challenges or focus disproportionately on emerging contractors and enterprises, without differentiating the unique barriers that hinder the growth, international competitiveness, and sustainable development of higher-tier local firms.

Furthermore, limited attention has been given to the economic implications of poor performance by these large local contractors, especially in terms of their contribution to national development, foreign exchange retention, and employment creation. Despite their numerical growth and increased graduation of engineering professionals, many Grade-1 contractors are still struggling to compete with foreign firms, fail to reach long-term sustainability, and are not adequately transferring capabilities to subsequent generations.

Additionally, while foreign direct investment (FDI) in the construction sector has been promoted as a development tool, the spillover benefits to local firms remain limited, and the consequences of continued foreign dominance such as capital outflows and missed opportunities for local capacity building are underexplored.

Therefore, this study fills a critical gap Focusing specifically on Grade-One local contractors in Addis Ababa by: 1.Investigating the key challenges affecting their performance; 2. Assessing the economic consequences of their underperformance on the broader construction industry and national economy; 3. Proposing evidence based mechanisms to improve their competitiveness and sustainability.

# CHAPTER THREE

# 3. RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter presents the research methodology adopted in achieving the objectives and provide justifications. Under this chapter it introduces the research approach adopted, identifies the tools and techniques and explains the nature of the objectives together with research methods employed. Finally, validity and reliability of the research design is discussed.

## 3.2 Research Design and Research Approach

### 3.2.1 Research Design

Regarding to the methods to be employed, the study used both descriptive and explanatory research designs. Research process should be designed critically to select appropriate methodologies which shall be used as a framework for the research work (Fellows and Liu 2015) as quoted by (Mengistu, 2019). The conceptual framework indicating the relationships were developed first through literature review. Utilize descriptive exploration of the local contractors in the construction industry and explanatory investigation to identify challenges and interventions relating to sources of the challenge variables. The advantage of descriptive survey research methods as defined by Kothari C.R. (2004) quoted by (Haile, 2022), is that it employs large amount of data from relatively wider area and allows high degree of interaction with respondents. Whereas in order to explain the causal relationship between the challenges impacting the economy, the research also employed explanatory research design to explain the causal relationship between independent and dependent variables.

### 3.2.2 Research Approach

Data collection methods and analysis techniques have to be determined to answer the question validly, accurately and reliably (Gezahegne, 2011). In this regard, this study employed mixed approach research paradigm (both quantitative and qualitative). Mixed method helps to triangulate qualitative and quantitative data sources and provides a better, more substantive picture about the topic understudy. Categories based on approaches are quantitative and qualitative (Kothari 2004) as stated by (Mengistu, 2019). He added, these method of research have their own limitations. In balancing weaknesses

of the methods, a combination of methodologies and collecting different types of data on the same phenomenon is assumed to be important (Haile, 2022).

This research was started from problem identification through informal discussion and preliminary unstructured literature review. As an output of this initial phase economic impact analysis of the challenges and poor performance of local contractors in Ethiopian construction industry was identified as a proposed problem to be studied. This needs exploring different aspects. The first objective was analyze the challenges and poor performance variables hindering local contractors from development. Questionnaire survey and semi-structured interviews involving senior and prominent professionals in the field were adopted for data collection to achieve this objective. The second objective were assess how these variables impacts the local contractor's development in turn impact the construction industry and broader economic in Ethiopia. The third objective of this study was develop improving measures to minimize the viable development lost by the local contractors in the construction sector. After the data were systematically recorded and analyzed, results of the improvement requirement and findings of the previous objectives were used as inputs to develop improvement mechanisms. Flowchart of the adopted methodology is illustrated in Figure 3.1 and details of methods of data collection and analysis techniques for both quantitative and qualitative approach are discussed subsequently.

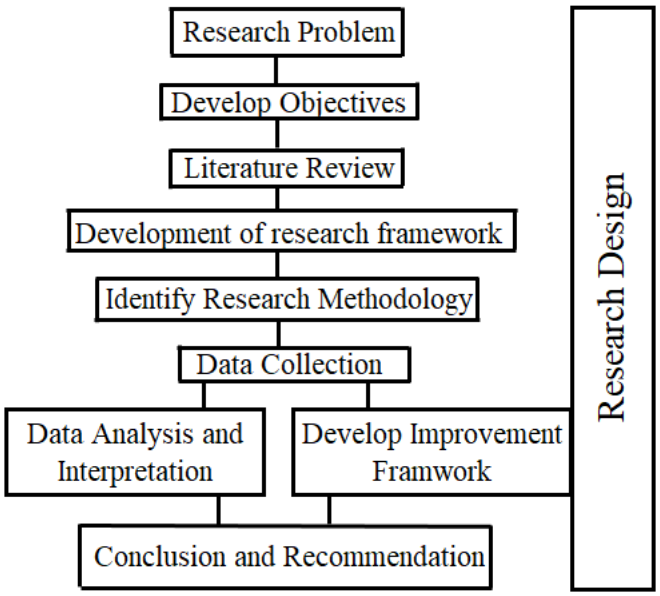



***Figure 3. 1 Summarized research methodology flowchart***

***Source: Developed from reviewed literature and own methodology flowchart (2025)***

## 3.3 Study Population and Sampling Method

### 3.3.1 Study Population

Study population is said to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information (Hair et al. ,2010) as quoted in (Haile, 2022). Accordingly, the population targeted to be surveyed were those stakeholders who directly or indirectly involved in the planning, design, construction and supervisor and overall decision making process of the construction industry. According to the Ethiopian Construction Authority (ECA) report published on October 9, 2024 (G.C.), a total of 80 local Grade One general contractors, the top ten construction consulting engineering firms, and seven registered clients under various government authorities were identified.

### 3.3.2 Sample size and Sampling Method

In a study having a large population size, it is obviously unpractical to collect data from the whole population. Thus, it is important to select a sample that can be representative to the population. Hence the objective of sampling is to provide a practical means that facilitates data collection and processing whilst ensuring that the sample is representative (Fellows & Liu, 2015) as cited by (Yada & Yadeta, 2021). From non-probability sampling the study used Purposive sampling technique and Clustered sampling technique, to help selecting the sample based on the objective of the study to obtain informed respondents and good response rate. The population were classified first by sector, then in to discipline and sample selection were taken from the professionals of the same.

Hence, as the unit of analysis is individual professionals, the total population size is unknown. To achieve this, purpose sample size was determined based on the iterative formula used by (Ankrah 2007, Oyewobi 2014) as cited by (Mengistu, 2019)was adopted.

$$ss = \frac{z^2 p(1-p)}{c^2}$$

Where: ss=is sample size, z=is standardized variable, p= is percentage picking a choice, expressed as a decimal and c= is confidence interval, expressed as a decimal. The assumptions made by those studies were adopted: to determine a sample size with a

given degree of accuracy the worst case percentage picking choice of 50% (0.5), 95% confidence level with a significance level of α = 0.05; z = 1.96 at 95% confidence level, and a confidence interval (c) of ±10% (0.1) was taken:

$$ss = \frac{1.96^2 \text{ x}0.5(1\text{-}0.5)}{0.1^2} = 96.04$$

*ss= 96.04,* which give a minimum of 97 respondents.

To determine the minimum number of individuals required to be surveyed in order to obtain statistically significant results with a desired level of confidence and margin of error, Cochran's standard formula was used, as cited by Nanjundeswaraswamy (2021). He noted that this statistical method is commonly used to calculate an appropriate sample size for surveys or studies, particularly when dealing with large or unknown populations.

Where;

N Population Size
Z Z-score(Confident Level)
e Margin of Error(Confident Interval)
P Standared of deviation
n Sample Size=

**Using the standared formula**

$$\frac{\frac{Z^2*P(1-P)}{e^2}}{1+\frac{(Z^2*P(1-P)}{e^2N}} \qquad \frac{\frac{1.96^2*0.5(1-0.5)}{0.1^2.}}{1+\frac{(1.96^2*0.5(1-0.5)}{0.1^2*N}}$$

Used Study Population Size;
Sample Calculation out of 80 Local GC-1

N 80
Z 1.96
e 0.1
P 0.5
n = ?

$$\frac{\frac{1.96^2*0.5(1-0.5)}{(0.1)^2}}{1+\frac{(1.96^2*0.5(1-0.5)}{(0.1)^2*78}} \quad n = \frac{96.04}{2.45} = 39.19$$

n ~ 40

Used Study Population Size;
Sample Calculation out of top ten Engineering Consultants(C-1)

N 10
Z 1.96
e 0.1
P 0.5
n = ?

$$\frac{\frac{1.96^2*0.5(1-0.5)}{(0.1)^2}}{1+\frac{(1.96^2*0.5(1-0.5)}{(0.1)^2*10}} \quad n = \frac{96.04}{19.60} = 4.90$$

n ~ 5

Used Study Population Size;
Sample Calculation out of 7 Government Construction Authority, Considered as Clients

N 7
Z 1.96
e 0.1
P 0.5
n = ?

$$\frac{\frac{1.96^2*0.5(1-0.5)}{(0.1)^2}}{1+\frac{(1.96^2*0.5(1-0.5)}{(0.1)^2*7}} \quad n = \frac{96.04}{28.01} = 3.43$$

n ~ 4

Considering the trend of people not willing to respond to questionnaires from unfamiliar researchers and mobility of professionals in the industry, personal contacts were collected through chain of friends as used by (Deng et al., 2013). He added that working experience and connection were used as selection criteria and minimum two years of experience was considered. As a result, it was possible to distribute 112 questionaries' for the sake of collecting the minimum size as determined below and as its necessity

interviewing will administer to participants for data convenience, and with a minimum percentage response rate of 70% -80% as said by (Shwala, 2018).

**Table 3. 1 Sample size determination and Sampling techniques**

| **Participants** | **Distributed No of Questionnaires** |
|---|---|
| Local contractor | 58 |
| Consultant | 15 |
| Client/owner | 15 |
| Government official | 12 |
| Regulatory body | 12 |
| **Total** | **112** |

The proportion set in the sampled size distribution table above were selected on the bases of estimated population size with in, their technical understanding, experience and exposures to the case under this study.

Hence, respondents included clients (15 employees including from 4 Government Construction Authority of the construction considered as clients), 15 consultant employees (from 5 top engineering consultant included in the supervision of the construction), for the sake of time and finance 58 questionnaires' were dispersed and collected from contractors registered in the Ethiopian Construction Authority, according to the Ethiopian Construction Authority (ECA) report published on October 9, 2024 (G.C.), regulatory body ( 12 estimated number of professionals' who are involved in the Construction Licenses and Competency Certificates register services office), government Officials(12 estimated number of professionals' included in the Ministry of Urban and Infrastructure (MUI) office, the policy makers); purposely dispersed to the construction stakeholders the top management level, civil engineers, designers, quantity surveyors, supervisors, administrators and employees of categories of works for a comprehensive view and understanding were taken as the target population of the study.

## 3.4 Data Collection and Data Sources

### 3.4.1 Data Collection

Methods of data collection relatively depends on the questionnaires and the questionnaire have been developed based on the statement of the problem, research objectives and review of literature and previous studies (Kothari, 2004). Based on this, the study used structured and close ended questionnaire as data collection instrument. In addition to close and open end question the study used structured personal interview to collect data

from the key informants from the client, contractor, and consultant and from government officials.

However, these facts contain desired aspects of truth and to abstract the meaning of the data, certain methodologies are required. Chilipunde (2010:61) cited by (Shwala, 2018) explained that two types of data exists, namely primary and secondary data.

### 3.4.2 Data Sources

This study has based on both quantitative and qualitative data taken from both primary and secondary sources of data to gather the necessary information. The primary data was gather using questionnaire, observation and interviews best suited to reflect on actual situations (Shwala, 2018). Shwala added that the secondary data was obtained through a review of existing material such as conferences, papers, journal publications, dissertations, unpublished thesis and books and the internet's as explained by (Mullins, 1994:23) cited (Chilipunde, 2010:65), data previously collected for purposes other than the research at hand. Hence, data were selected according to their relevance to the study which includes the regulatory body and Ministry of Urban and Infrastructure (MUI) office reports, government documents, books, journals, published and/or unpublished research paper dealing with challenges and impacts of the challenges relevant to this study. Questionnaire survey was prepared in Google Form and the link was forwarded to the respondents, in the case where to send google form not available was collected physically in the print form and filled carefully. Reminders were made through email and phone calls to obtain good response rate. The questionnaire was kept open from September to November, 2024 for three full months and minimum two reminders were sent to the respondents.

## 3.5 Method of Data Analysis

Qualitative and quantitative data analysis techniques were employed because data are to be collected have quantitative and qualitative nature. The data was analyzed by using SPSS version 25. The statistical tools was presumed to align with the objectives of the research.

### 3.5.1 Quantitative Data Analysis

Quantitative data was analyzed through descriptive and inferential statistical ways. Depending on the nature of the research questions, the questionnaires were analyzed based on Likert scale of five ordinal measure regarding the relative importance of each

variables towards each statement. The ordinal scales used, which involve ranking or rating data that uses integers in ascending or descending order. Numbers (1, 2, 3, 4, 5) assigned a rank from strongly disagree to strongly agree are responses obtained from the questionnaires. The numbers indicate the relative importance of each variables of the respondents to each of the specific questions. The degree of agreements or disagreements of the respondents are outlined as follows.1= Strongly Disagree, 2= Disagree, 3= Average, 4= Agree and 5= Strongly Agree.

A Likert scale is a psychometric response scale primarily used in questionnaires to obtain participants preferences or degree of agreement with a statement or set of statements. Likert scales are a non-comparative scaling technique and are unidimensional (only measure a single trait) in nature. Respondents are asked to indicate their level of agreement with a given statement by way of an ordinal scale. The main reason of selecting this simple scale is first, to make the respondent feel comfortable and simple in answering those questions and second, for easy evaluation of the collected answers (Robson, 2002).

Accordingly, data reduction were occurred continuously during the course of this study to validate the findings. During the data analysis phase, data reduction will still occur. After editing, coding and filtering errors, the quantitative data was first entered in to SPSS program (version 25), used for analyses and presentation of data to facilitate descriptive and inferential statistics analysis in this paper.

#### 3.5.1.1 Descriptive Statistics

Mean and standard deviation were utilized i.e., to rank variables in measuring the intended objectives. When necessary to test the agreement between groups of respondents, Spearman‟s rank order correlation together with Excel analysis was utilized. For example, to test the agreement between perceptions of the stakeholders on challenges of the industry the ranking was done for five groups: client/owner, consultant, government official, local contractor and regulatory body. rho’s is a statistical method used to measure the strength and direction of the relationship between two variables when the data is ordinal (ranked) or not normally distributed(Mengistu, 2019). It's a non-parametric test, which means it doesn't assume that the data follows a specific distribution. Mengistu, added that, Independent sample T-test was conducted to test significance of the mean difference where variable wise discussion was required as

explained by (Kang et al.2018). Similarly, one sample T-test was used to identify the significant variables considering hypothetical mean value of three with 95% confidence (Tripathi and Jha 2018).To go through step by step, the formula for Spearman's rank correlation coefficient (denoted as ρ) is:

$$\rho = 1 - \frac{6 \sum d^2_i}{n(n^2-1)}$$

Where: ρ = is Spearman's rank correlation coefficient, di = is the difference in ranks for each pair of values, n =is the number of data pairs. The analysis was conducted using SPSS, software method and the correlation result rages from -1 to +1. A +1 value indicates a perfect positive correlation (as one variable increases, the other also increases), in which the closer the absolute value of ρ is to 1, the stronger the relationship. Whereas, a -1 value indicates a perfect negative correlation (as one variable increases, the other decreases) and a 0 value indicates no correlation. The assumed range for measuring relationship strength according to Spearman's rank correlation coefficient are as table below.

**Table 3. 2 Spearman's rank correlation coefficient range**

| **For positive correlation** | | **For negative correlations** | |
|---|---|---|---|
| **Range of ρ value** | **Correlation.** | **Range of ρ Value** | **Correlation.** |
| 0.00 – 0.19 | Very Weak or No | -0.00 – -0.19 | Very Weak or No |
| 0.20 – 0.39 | Weak positive | -0.20 – -0.39 | Weak negative |
| 0.40 – 0.59 | Moderate positive | -0.40 – -0.59 | Moderate negative |
| 0.60 – 0.79 | Strong positive | -0.60 – -0.79 | Strong negative |
| 0.80 – 1.00 | Very Strong positive | -0.80 – -1.00 | Very Strong negative |

***Source: Survey result and own computation (2025)***

### 3.5.1.2 Factor Analysis

Factor analysis is a statistical approach that helps to analyze the interrelationships among a large number of variables and explain the variables through the underlying dimensions, its objective being reduction of large variables to small set of dimensions through grouping (Hair et al. 2010) as cited by(Mengistu, 2019). For example, grouped items such as financial constraints, technical expertise, regulatory and legal issues, and market dynamics using factor analysis can help determine whether these challenges can be clustered into broader themes or dimensions. As he indicated factor analysis can be used to determine: (i) grouping or clustering of variables, (ii) how strong the variables belong to the group, (iii) number of dimensions needed to explain the relationship among the variables and (iv) a frame of reference to describe relationship among the variables

(Nunnally & Bernstein, 1994). This analysis utilizes exploratory factor analysis that extract factors from a set of variables, generating the underlying dimensions. Its objective is to choose factors that can adequately represent the data while eliminating statistically or theoretically irrelevant factors as explained by (Fabrigar et al., 1999).

Variables‟ loading under each factor (component) indicates only correlation of the variables to the individual component but not importance of the extracted component. Hence, factor score formula for factor score ranking was used to identify relative importance of the components (Fan & Fox 2009, Oladinrin & Ho 2015, Ogbu 2018) quoted (Mengistu, 2019) are as shown below.

$$\underline{Fi=\sum_{j=1}^{N} A_{ij}}$$
$$n$$

Where Fi=factor score; Aij=mean score of the $j^{th}$ variable of factor i and n=the number of variables associated with the factor.

### 3.5.1.3 Correlation Analysis

Correlation is used to examine the relationships between variables, it ranges from +1 to -1 where zero indicates no relationship and (+) or (-) indicates the direction of relationship (Evans & Basu, 2013). For example, financial constraints (access to credit) might correlate with poor performance (e.g., cost overruns, project delays). Correlation analysis was conducted to understand nature of these relationships among the factors of the local contractors which variables are strongly related. This highlights a key area of concern for contractors.

Moreover, to analyses the casual relationship between independent variables and dependents variable, inferential statistics was conducted. Therefore, Spearman‟s rank order correlation was conducted so as to show the relationship between dependent and independent variable and the strength/degree as well as direction of associations between variables. In addition, to develop functional relationship among the independent variables and dependent variable Multivariate (Multiple) regression model was employed.

### 3.5.1.4 Regression Analysis Model

The Multiple regression analysis model was selected because the study was intended to investigate more than one independent variables and predict its effects on a dependent variable. Multiple Regression equation for the study is expressed as follows:

The model used to show this relationship is as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_{6+} \varepsilon$$

Where: Y = dependent variable (Economic Impact), $\beta_0$ = Constant, $\beta_1$, $\beta_2 \ldots_6$= the coefficients of the independent variables that are determined, $X_1$= Financial constraints factors (FCF), $X_2$= Regulatory and Legal Issues factors (RLF), $X_3$= Technical Expertise factors (TEF), $X_4$= Infrastructure Issues Factors (IIF), $X_5$= Market Dynamics Factors (MDF), $X_6$= contractor Poor Performance Factors(CPPF) and ε= error term. To ensure reliable and valid results from the analysis, all assumptions for multiple regression must be met before interpreting the results.

### 3.5.2 Qualitative Data Analysis

Qualitative data analysis is a range of processes and procedures whereby the researcher moves from the qualitative data that have been collected into some form of explanation, understanding or interpretive philosophy, Lewis, Taylor and Gibbs (2010) as cited by (Shwala, 2018). This refers to the data reduction process of selecting, focusing, simplifying, abstracting, and transforming data as explained by (Neuman, 2011).

Interviews were held with 20 professionals with minimum of 10 years‟ experience from different background. The data that were analyzed qualitatively using explanatory and thematic form in correspondence to the main research questions. As Best (2003) cited by (Haile, 2022) stated analysis of qualitative study basically involves word argumentations as numerical explanations and the multiple meanings of individual experiences meanings socially and general constructed perspectives are addressed. This was used for all data collected through interviews not be quantified, done thematically in a systematic way in order to triangulate the finding that were obtained from quantitative sources.

## 3.6 Validity and Reliability

As (Shwala, 2018) cited “the concepts of validity is a contingent construct, inescapable grounded in the processes and intentions of particular research methodologies and projects” as (Winter 2000:1, Creswell & Miller 2000) further suggest that the validity is affected by the researcher’s perspective of validity in the study and choice of paradigm assumptions’’. It indicates the extents to which a variables or set of variables are consistent in what it is intended to measure” as mentioned by (Kothar 2009: 190-92) and quoted (Haile, 2022)

This research questionnaire was reviewed by the advisor of the study, project managers and site engineers actively participate in the construction industry to check the suitability of the questions, and language (style of expression), and questionnaire was distributed to 10 participants after taking comments and suggestions to from the pilot test. After, collecting these sample questionnaires, a pre-test result using a Cronbach alpha value of above 0.7 is presented in the table 3.6 below. This usually considers to offer reasonable reliability for research purposes (Kothari, 2014) as quoted by (Haile, 2022).

Reliability is fundamentally concerned with issue of consistency of measures(Mengistu et al., 2023). According, he quoted (Hair, et al., 2006), if Cronbach's alpha (α) greater than 0.7, it means that it has high reliability and if α less than 0.3, then it implies that there is low reliability. This refers different authors accept different value of this test in order to achieve internal reliability, but the most accepted value is 0.7 as it should be equal or to higher than to reach internal reliability.

**Table 3. 3 Cronbach‟s alpha (α) value pre-test for the research constructs**

| **Questionnaire Section** | **Measured Constructs** | **N of Items** | **Alpha Value (α)** |
|---|---|---|---|
| Key Performance Challenges | Financial constraints | 7 | 0.891 |
| | Regulatory and Legal Issues | 10 | 0.873 |
| | Technical Expertise | 11 | 0.81 |
| | Infrastructure issues | 2 | 0.844 |
| | Market Dynamics | 4 | 0.99 |
| Poor Performance Variables | Poor Performance indicator Variables | 11 | 0.876 |
| Economic Impact variables | Economic Impact variables | 9 | 0.881 |
| **Entire Questionnaire** | | **54** | **0.919** |

***Source: Survey result and own computation (2025)***

## 3.7 Ethical consideration

Participants in this study were appropriately informed about the purpose of the research and their willingness and consent was secured before the beginning of distributing questionnaire. In this regard, the right to privacy of the identity of each respondents, the study preserved the confidentiality of the participant, shall be maintained. The completed questionnaires were filed safely and accessible only to the researcher and thesis advisor kept confidential to the respondent. Collective names like "respondents and interviewee‟ were used during analysis.

## 3.8 Summary of the chapter

Research design is formulated by using research questions and was adopted mixed method approach. Quantitative data was collected through structured survey questionnaires. Using purposive sampling method, respondents were select from the major stakeholders and subsectors of the industry. The questionnaire forwarded to 112 selected professionals and 97 valid responses were collected which accounts for 86.61% response rate. IBM SPSS version 25 software was used for descriptive analysis, statistical analysis, factor analysis, and correlation and regression analysis.

Using semi-structured interviews qualitative data was collected and set with the purpose of identifying challenges of the local contractors and acquire suggestion of professionals for improvement mechanisms. Interviews were held with 20 professionals with a minimum of 10 years‟ experience. And, finally validity and reliability test was conducted using Cronbach‟s alpha (α) value accounts for 0.919.

# CHAPTER FOUR

# 4. RESULT AND DISCUSSION

This chapter focuses on analysis of the data obtained from the participants through questionnaire survey, interviews and observations are presented and analyzed. Descriptive and inferential statistics (mean and standard deviation, frequencies and percentages, cross-tabulations, Factor analysis, correlation, regression) and different statistics test using IBM SPSS version 25 software was used to summarize data effectively whenever necessary.

## 4.1. Response Rate Part

Part one of the questionnaire was designed to gather background information about the respondents who participated in the study. To ensure a broad and representative sample, the survey was distributed among professionals from various sectors, including local contractors, consultants, client/owners, government officials, and representatives from the regulatory body. In total, 112 surveys were distributed across these categories, and 97 responses were received, resulting in an overall response rate of 86.61%.

Upon analyzing the response rates by category, it is evident that the client/owner group exhibited the highest level of engagement, with a response rate of 93.33%. This could indicate a strong interest or significant investment in the subject matter of the survey, suggesting that the issues addressed may be particularly relevant to this group. In contrast, the response rate from government officials was lower at 75.00%, highlighting a potential area for improvement in future surveys. Engaging government officials more effectively could enhance the comprehensiveness and representativeness of future data collection efforts. The breakdown of responses is summarized in Table 4.1, which illustrates the number of surveys distributed and the response rates across the different professional categories:

**Table 4. 1 Response rate of distributed questionnaires**

| Participant/ | Questionnaires Distributed(No.) | Returned | |
|---|---|---|---|
| | | Frequency | Response (%) |
| Local contractor | 58 | 51 | 87.93 |
| Consultant | 15 | 13 | 86.67 |
| Client/owner | 15 | 14 | 93.33 |

| | | | |
|---|---|---|---|
| Government official | 12 | 9 | 75 |
| Regulatory body | 12 | 10 | 83.33 |
| Other (please specify) | 0 | 0 | 0 |
| **Total** | **112** | **97** | **86.61** |

***Source: Survey result and own computation (2025)***

The most frequent role in this study has make up of local contractors, the majority of respondents (52.58%). This suggests that the perspectives provided in the survey are heavily influenced by local contractors, which may offer insights into the challenges they face. In addition, consultants (13.40%) and clients/owners (14.43%) are also represented, while government officials (9.28%) and regulatory bodies (10.31%) have a smaller share. This is to indicate that most feedback comes from industry practitioners rather than policy or oversight bodies. The survey was skewed toward individuals working directly in construction, which is valuable when examining practical challenges faced in daily operations.

## 4.2 Background Information

**Table 4. 2 Background information of respondent**

| **Work experience** | | |
|---|---|---|
| **Experience in Construction Industry** | **Frequency** | **Response (%)** |
| 0-5 | 16 | 16.49 |
| 5-10 | 30 | 30.93 |
| 11-15 | 21 | 21.65 |
| 16-20 | 20 | 20.62 |
| 21+ | 10 | 10.31 |
| **Personal involvement** | | |
| **Personal involvement** | **Frequency** | **Response (%)** |
| Employee | 81 | 83.51 |
| Owner | 11 | 11.34 |
| Partner | 5 | 5.15 |
| Others (Specify | 0 | 0.00 |
| **Educational background** | | |
| **Educational Background** | **Frequency** | **Response (%)** |
| Diploma | 0 | 0.00% |
| BSc. | 72 | 74.23% |
| MSc. | 25 | 25.77% |
| PhD. | 0 | 0.00% |
| Others (Specify) | 0 | 0.00% |
| **Profession** | | |
| **Profession of respondent** | **Frequency** | **Response (%)** |
| Architect, | 1 | 1.03 |

| | | |
|---|---|---|
| Building Service Engineer | 2 | 2.06 |
| Civil/Structural Engineer | 59 | 60.82 |
| Hydraulic Engineer | 3 | 3.09 |
| Material Engineer | 8 | 8.25 |
| Office Engineer | 2 | 2.06 |
| Project/Construction Manager | 18 | 18.56 |
| Quantity Surveyor | 4 | 4.12 |
| **Organization's experience** | | |
| **Organization's experience** | **Frequency** | **Response (%)** |
| Up to 15 Years | 33 | 34.02% |
| 16 - 30 | 29 | 29.90% |
| 31 - 45 | 7 | 7.22% |
| 46 -55 | 12 | 12.37% |
| 56 - 70 | 13 | 13.40% |
| >70 | 3 | 3.09% |
| **Participation in the Construction Industry** | | |
| **Participation in the Construction Industry** | **Frequency** | **Response (%)** |
| Yes | 97 | 100.00 |
| No | 0 | 0.00 |
| **Organization's participation in the infrastructure construction** | | |
| **Type of Infrastructure Construction** | **Frequency** | **Response (%)** |
| Building | 3 | 3.09% |
| Commercial/Residential | 1 | 1.03% |
| General (all infrastructure) | 68 | 70.10% |
| Road | 19 | 19.59% |
| Waterworks/Dam | 6 | 6.19% |
| Other (list) | 0 | 0.00% |

***Source: Survey result and own computation (2025)***

As illustrated in Table 4.2, the majority of respondents (30 or 30.93%) had between 5 to 10 years of work experience in their respective positions, which enabled them to provide valuable insights for the study. This group represented a significant portion of the sample, demonstrating a solid level of experience without being too far removed from the earlier stages of their careers. Additionally, 21 respondents (21.65%) had between 11 to 15 years of experience, while 20 respondents (20.62%) had worked in the field for 16 to 20 years, offering a broad range of perspectives. A smaller proportion, 16 respondents (16.49%), had relatively less experience, ranging from 0 to 5 years, suggesting that these individuals were likely in the earlier stages of their careers. Lastly, 10 respondents (10.31%) possessed more than 21 years of experience, contributing a wealth of long-term knowledge and expertise to the study. This diverse range of experience levels highlighted

the study's broad representation, covering both relatively new professionals and those with significant experience in the field. This variety ensured that the findings reflected a well-rounded understanding of the study.

The majority of respondents were employees, with 81 (83.51%) identifying as such. A smaller portion of respondents were owners (11 or 11.34%) or partners (5 or 5.15%). The table visually illustrate that the overwhelming majority of respondents were employees, while owners and partners made up a smaller proportion of the sample. The absence of responses in the "Others (Specify)" category further emphasizes the clarity and focus of the participant roles in this study. The data reflect operational challenges from a more hierarchical or employee-based perspective, with a smaller but notably captures the strategic challenges faced by owners and partners in the industry.

Regarding educational qualifications, the largest group of respondents held a Bachelor's degree (BSc.), with 72 individuals (74.23%). A significant portion of respondents also held a Master's degree (MSc.), with 25 individuals (25.77%). No respondents had a Diploma, PhD, or other educational backgrounds. The result highlights that the predominant educational qualification among respondents was a Bachelor's degree, with a smaller but notable proportion having a Master's degree. This suggests a highly skilled group, which can provide insights into technical and management challenges faced by contractors.

In terms of professional roles, the majority of respondents were civil/structural engineers (59 or 60.82%), followed by project/construction managers (18 or 18.56%). Other professions represented included material engineers (8 or 8.25%), hydraulic engineers (3 or 3.09%), quantity surveyors (4 or 4.12%), building service engineers (2 or 2.06%), and office engineers (2 or 2.06%). Only 1 respondent (1.03%) identified as an Architect. The result illustrates the diverse range of professional roles among the respondents, with civil/structural engineers representing the largest group, followed by project/construction managers. Other professions, though smaller in number, provided a broad spectrum of expertise for the study. The survey is dominated by engineers and project managers, which aligns with the operational and technical focus of the challenges being investigated.

Respondents' organizations exhibited a broad range of experience. A significant portion of organizations had up to 15 years of experience (33 or 34.02%). Many organizations also had between 16 to 30 years of experience (29 or 29.90%). Fewer organizations had between 31 to 45 years (7 or 7.22%), 46 to 55 years (12 or 12.37%), or 56 to 70 years (13 or 13.40%). Only 3 organizations (3.09%) had over 70 years of experience.

The result as indicated in the above table reflects the varied levels of experience across the respondent organizations, with a notable concentration in those with up to 30 years of experience. Fewer organizations had extensive histories, particularly those with over 70 years of experience, highlighting the mix of both relatively newer and long-established organizations in the sample. The data indicates a mix of organizations with both relatively new and more established histories, which can provide a broad view of the challenges across different stages of business growth.

All respondents (97 or 100%) were currently participating in the construction industry, with no respondents indicating otherwise. This table underscores that every respondent was involved in the construction industry, ensuring that the study's findings are directly applicable to the sector. This makes the survey focused entirely on current industry participants, providing insights from active players.

Regarding the type of infrastructure construction their organizations participated in, most respondents (68 or 70.10%) were involved in general infrastructure projects. Other areas of participation included road construction (19 or 19.59%), waterworks/dam projects (6 or 6.19%), and building projects (3 or 3.09%). Only 1 respondent (1.03%) indicated involvement in commercial or residential projects. The distribution of organizations' participation in infrastructure construction is presented in the table below: The result illustrates the diverse participation of organizations in various infrastructure construction sectors, with a dominant focus on general infrastructure projects. The majority of organizations are involved in large-scale or general infrastructure projects, suggesting the data may reflect challenges related to these types of projects more heavily. Related all the above sections, weather the roles of people hold in the construction industry influence the types of infrastructure projects they are involved in the interrelationships is explained here under section 4.2.1

### 4.2.1. Relationship between Participants and their Role in the Sector

This part was conducted using cross-tabulation analyses in SPSS to examine the relationship between participants and their role participation in the infrastructure construction. The relationship between "Role in the construction industry" and "Participation in infrastructure construction" had seeing that" the majority of local contractors (70.59%) are involved in general infrastructure projects, compared to only 17.65% in road construction and waterworks/dam (9.80%). Consultants show a strong preference for general infrastructure (69.23%) and have some involvement in road (23.08%) and waterworks/dam (7.69%) as shown in the table below.

**Table 4. 3 Interrelationship between respondents and their participation**

| Participants | | Participation in infrastructure construction | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Building** | **Commercial /Residential** | **General (all infrastructure)** | **Road** | **Waterworks /Dam** | **Total** |
| **Role** | **Local contractor** | 1(1.96%) | 0(0%) | 36(70.59%) | 9(17.65%) | 5(9.80%) | 51(100%) |
| | **Consultant** | 0(0%) | 0(0%) | 9(69.23%) | 3(23.08%) | 1(7.69%) | 13(100%) |

## 4.3. Key Challenges Facing Local Contractors

This section presents the challenges faced by local contractors, as revealed through a quantitative analysis of survey responses and interviews. As mentioned in the conceptual framework of the study in Chapter 2, the challenges impacting local contractors in Ethiopia were classified according to their assumed sources. A descriptive analysis was performed to assess the impact level of these challenges and the stakeholders' perceptions regarding them. To evaluate stakeholders' overall perception of the severity of these challenges, Spearman's rank correlation coefficient test was utilized, and a one-sample T-test was employed to identify significant variables.

The significant variables were subjected to factor analysis to identify underlying dimensions of the sources. Factor analysis was conducted using principal component analysis with varimax orthogonal rotation and Kaiser Criterion method (Eigenvalue exceeding one) was used to select the factors. Results of KMO and Bartlett's Test of Sphericity are summarized in Table 4.4. The KMO statistic indicates the degree to which the data was suitable for factor analysis. Values closer to 1.0 suggested that the data was highly suitable, while values below 0.5 indicated that factor analysis may not be appropriate. Additionally, discussion is provided on findings from interviews and these findings are also used as a means of triangulating survey findings.

The result of the data is shown in the table below that except for infrastructure issues (II) all show strong suitability for factor analysis with KMO values above 0.7, and Bartlett's Test of Sphericity was significant. Infrastructure issues (II) has a borderline KMO value of 0.5, which suggests that caution is needed when interpreting factor analysis results for this variable. While Bartlett's Test is still significant, the factor analysis was appropriate for this set of data.

**Table 4. 4 Appropriateness test of the challenge's data for factor analysis**

| **Sources of the variables** | **KMO** | **Bartlett's Test of Sphericity(The Chi-Square)** |
|---|---|---|
| Financial constraints (FC) | 0.838 | significance |
| Regulatory and legal issues (RL) | 0.883 | significance |
| Technical expertise(TE) | 0.900 | significance |
| Infrastructure issues(II) | 0.5 | significance |
| Market dynamics(MD) | 0.761 | significance |
| Contractor poor performance variables (CPP) | 0.842 | significance |
| Economic impact variables (EI) | 0.895 | significance |

***Source: Survey result and own computation (2025)***

### 4.3.1. Financial Constraint Challenges

Mean values, the rankings and one sample T-test results are summarized in Table 4.5 Spearman's rank order correlation test shows that there is consensus on the level of impact of the variables between the groups of respondents. However, mean values of most of the variables being greater than three implies the difference is only on extent of the impact(Haile, 2022).

Aggregate results shows that the top three variables in terms of impact for financial issues are among the top challenges for local contractors, with key variables like access to foreign currency (mean: 3.95) is ranked first by all stakeholders except the regulatory body, signaled that local contractors are heavily dependent on foreign currency for materials and operational costs. And credit and finance (mean: 3.85) identified as the most pressing concerns ranked second across various stakeholders (clients, consultants, government officials, etc.). This is showing that financing options are often limited for local contractors, hindering their ability to grow and manage larger projects. Moreover, issues like finance and credit management (mean: 3.71) and obtaining guarantee bonds (mean: 3.71) also stand out as substantial challenges. The One-Sample Test confirms the

statistical significance of these differences, highlighting the importance of understanding stakeholder-specific concerns when addressing challenges in project management.

**Table 4. 5 Descriptive statistics of financial challenging variables**

| Challenging variables | Client/owner | | Consultant | | Government official | | Local contractor | | Regulatory body | | Total | | One-Sample T-Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Sig. (2-tailed) |
| Access to foreign currency | 4.29 | 1 | 3.77 | 1 | 4.67 | 1 | 4.18 | 1 | 1.90 | 6 | **3.95** | **1** | **0.000** |
| Access to Credit and finance | 4.21 | 2 | 3.31 | 4 | 4.44 | 2 | 4.10 | 2 | 2.20 | 5 | **3.85** | **2** | **0.000** |
| Finance and credit management | 3.71 | 3 | 3.54 | 2 | 3.78 | 3 | 3.82 | 3 | 2.90 | 3 | **3.67** | **3** | **0.000** |
| Applicable Price adjustment mechanism | 3.64 | 4 | 3.31 | 4 | 3.67 | 4 | 3.75 | 4 | 3.30 | 1 | **3.62** | **4** | **0.000** |
| Problems in obtaining guarantee bonds, sureties and insurance bonds | 3.71 | 3 | 3.38 | 3 | 3.33 | 5 | 3.63 | 6 | 3.20 | 2 | **3.54** | **5** | **0.000** |
| Applicable Retention amount and mode of payment | 3.50 | 5 | 2.85 | 6 | 3.33 | 5 | 3.67 | 5 | 3.30 | 1 | **3.46** | **6** | **0.000** |
| Book-keeping | 3.21 | 6 | 2.92 | 5 | 3.78 | 3 | 3.51 | 7 | 2.70 | 4 | **3.33** | **7** | **0.000** |

***Source: Survey result and own computation (2025)***

As in the Table of appendix B (1) below indicated the rho's test results provide valuable insights into how different stakeholders in the construction sector view the financial constraints that impact local contractors. The table presents correlation coefficients (ρ) between different groups of respondents, including clients, consultants, government officials, contractors, and regulatory bodies. These correlations range from strong

positive to weak negative, indicating varying degrees of agreement and divergence in how financial challenges are perceived by each group.

The strong positive correlation between the client and consultant ($\rho = 0.875$), client & government ($\rho = 0.768$), client & contractor ($\rho = 0.821$), consultants and government officials ($\rho = 0.750$), consultants and contractors ($\rho = 0.661$) and government officials and contractors ($\rho = 0.696$), suggested a shared understanding of the financial difficulties encounter, which could lead to more collaborative efforts in addressing these challenges. Whereas, the week negative correlation among clients and regulatory bodies ($\rho = -0.143$), consultant & regulatory body ($\rho = -0.125$), government & regulatory body ($\rho = -0.232$), and contractor & regulatory body ($\rho = -0.500$), which shows that there is difference in perception of groups on the challenges of the industry, and this might be due to the difference in the nature of their business establishments. However, mean values of most of the variables being greater than three implies the difference is only on extent of the impact. This discrepancy points to the need for more dialogue among these groups to better understand and address the practical financial challenges that contractors face.

As shown in Table 4.6 below, the factor analysis of the significant variables has revealed two components that account for a cumulative variance of 71.74%. The remaining components contribute smaller amounts to the total variance, indicating that while there are multiple related issues, they are more specific in nature compared to the central underlying factor. To reflect the variables that cluster together, these components have been designated as follows: component 1 (access to finance and credit management) and component 2 (financial management and payment structures). The variance explained section indicates that component 1 accounts for 55.33% of the total variance, while component 2 accounts for 16.42%. Together, they explain 71.74% of the cumulative variance. This suggests that these two components capture a substantial portion of the variability in financial constraints faced by local contractors. The factor scores for component 1 (3.70) and component 2 (3.54) imply that both components have relatively high scores, indicating a strong presence of these factors within the dataset. This analysis outlines various challenge variables associated with financial constraints and their respective loadings on two identified components.

**Table 4. 6 Factor analysis of variables related to financial constraints**

| Challenge variables from financial constraints | Component | |
|---|---|---|
| | 1 | 2 |
| Applicable Retention amount and mode of payment | | 0.878 |
| Applicable Price adjustment mechanism | | 0.847 |
| Problems in obtaining guarantee bonds, sureties and insurance bonds | 0.326 | 0.744 |
| Access to foreign currency | 0.882 | |
| Access to Credit and finance | 0.838 | |
| Book-keeping | 0.692 | |
| Finance and credit management | 0.594 | 0.591 |
| Variance explained % | 55.33% | 16.42 % |
| Cumulative Variance explained % | | 71.74% |
| Factor Score | 3.70 | 3.54 |

***Source: Survey result and own computation (2025)***

## Access to Finance and Credit Management

The result revealed that access to finance and credit management accounts for the largest portion of the variance (55.33%) was identified as the highest factor with a factor score value (3.7) affecting the performance of local contractors in Ethiopia. This was supported by its strong correlations with multiple factors, including access to foreign currency (.882), access to credit and finance (.838), book keeping (.692) and finance and credit management (.594). All of which are critical for contractors to secure materials, manage operational costs, and maintain liquidity. Many construction firms have suffered financial ruin and bankruptcy because of delays in payment, which are common with government contracts(Ofori, 2009).

Local contractors relay heavily on foreign currency to procure materials and cover operational costs, which poses significant challenges given the volatility of exchange rates and the limited availability of foreign currency. This challenge was ranked the highest with a mean value of 3.95 and (.882) by all stakeholder groups (clients, consultants, government officials) except for the regulatory body, which ranks it lower. A significant number of local contractors in Ethiopia struggle with limited access to credit from financial institutions as the result indicated with a mean value of 3.85 and (.838) ranked at second without sufficient credit facilities, Contractors often struggle to obtain the necessary funding to cover material costs, labor, and equipment, contributing to the financial instability that undermines their performance. Effective bookkeeping practices are critical for contractors to track expenses and manage cash flow. However, many local contractors lack adequate bookkeeping systems, further complicating financial management. This reality was confirmed by the various stakeholders with a

mean value 3.33 and (.692). Effective financial management was integral to successful project completion. However, many local contractors lack the capacity to manage finances effectively, which exacerbates their financial difficulties. With a mean of 3.67, the majority of respondents from various stakeholder groups highlighted this issue as a significant constraint.

### Financial management and payment structures

The result revealed that the second highest factor with a factor score value (3.54) affecting the performance of local contractors in Ethiopia. This was supported by its strong correlations with multiple factors, including applicable retention amount and mode of payment (.878), applicable price adjustment mechanism (.847) and problems in obtaining guarantee bonds (.744).

Under this component, the retention amounts was ranked as the most significant variables which are sums of money withheld from a contractor's payments to ensure the successful completion of the project, including addressing any defects or warranty obligations. While retention clauses are designed to protect clients, they pose a financial challenge for local contractors as the result indicated mean of 3.46 and (.878). This tells us that withholding of a percentage of payments delays the contractor's cash flow and can cause significant financial stress, who are already grappling with limited working capital. Furthermore, the delayed release of retention amounts often leads to disputes and dissatisfaction among contractors, which can impact their reputation and client relationships.

The next ranked factor under this component was price adjustment mechanisms as the most significant variables with mean of 3.62 and (.847), which are critical in managing the risks associated with fluctuations in material and labor costs during the course of a construction project. The group of respondents reflected that in Ethiopia, inflation and price instability are common, and without appropriate price adjustment clauses, contractors are vulnerable to sudden increases in the cost of materials, fuel, and labor. When price adjustments are not included in contracts or are poorly structured, contractors may struggle to absorb these cost increases, leading to reduced profitability or even financial losses.

The third most significant variable that clustered under this component was guarantee bonds required in construction projects was often a critical barrier for local contractors,

the result confirming with a mean of 3.54 and (.744). This imply that difficulty in obtaining guarantee bonds is another financial constraint faced by contractors, limited their ability to compete for larger projects. As a result, they may face challenges in bidding for larger projects or maintaining client confidence in their ability to fulfill contract terms.

### 4.3.2. Regulatory and Legal Issues Challenges

Results with respect to regulatory and legal issue challenges are summarized in Table 4.7 below. The result indicated that regulatory challenges are significant for local contractors, with corruption and lack of transparency (mean: 4.24) topping the list. This challenge was identified by multiple stakeholders as a barrier to effective governance and fair competition. The bureaucracy (mean: 4.06) in government processes and political influence on government policy (Mean: 3.97) also ranked highly respectively, indicated that red tape and political interference hinder contractors' ability to operate smoothly. The instability of regulatory authorities and enforcement of policies also represent challenges, suggested that fluctuating or unclear regulatory frameworks undermine the confidence and operational efficiency of local contractors.

**Table 4. 7 Descriptive statistics of regulatory and legal issue challenges**

| Challenging variables | Client/owner | | Consultant | | Government official | | Local contractor | | Regulatory body | | Total | | One-Sample Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Sig. (2-tailed) |
| Corruption and lack of transparency | 4.14 | 1 | 3.92 | 2 | 4.44 | 3 | 4.53 | 1 | 3.10 | 3 | **4.24** | **1** | **0.000** |
| Government bureaucracy | 3.93 | 3 | 4.00 | 1 | 4.67 | 2 | 4.18 | 4 | 3.20 | 2 | **4.06** | **2** | **0.000** |
| Political influence on government policy | 3.93 | 3 | 3.15 | 4 | 4.89 | 1 | 4.24 | 2 | 2.90 | 4 | **3.97** | **3** | **0.000** |
| Government intervention | 3.93 | 3 | 3.46 | 3 | 4.67 | 2 | 4.20 | 3 | 2.90 | 4 | **3.97** | **4** | **0.000** |
| Absence of clear policy and regulations to properly guide the industry | 3.93 | 3 | 3.00 | 5 | 4.22 | 4 | 3.78 | 7 | 2.90 | 4 | **3.65** | **5** | **0.000** |
| Instability & dynamism of regulatory authorities and institutes | 3.93 | 3 | 2.77 | 8 | 3.56 | 6 | 3.92 | 5 | 2.90 | 4 | **3.63** | **6** | **0.000** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity of regulatory bodies, i.e. relevant government departments | 4.00 | 2 | 2.85 | 7 | 3.44 | 7 | 3.69 | 9 | 3.50 | 1 | **3.58** | **7** | **0.000** |
| Enforcement/ proper guide of the policy and regulations | 3.64 | 5 | 2.62 | 9 | 3.00 | 8 | 3.86 | 6 | 2.80 | 5 | **3.47** | **8** | **0.000** |
| Efficiency of registration system (firms and professionals) | 3.71 | 4 | 2.62 | 9 | 3.78 | 5 | 3.57 | 10 | 3.20 | 2 | **3.44** | **9** | **0.000** |
| Suitability of the applicable Procurement system | 3.36 | 6 | 2.92 | 6 | 3.56 | 6 | 3.71 | 8 | 2.60 | 6 | **3.42** | **10** | **0.000** |

***Source: Survey result and own computation (2025)***

As in the Table of appendix B (2) below indicated the rho's suggests a strong positive correlation between some stakeholders, this means that the higher the ranking (the more challenging the variable), the more similarly the stakeholder group ranks the same variable reflecting a shared understanding of the challenges faced by local contractors. The very strong and strong positive correlations among group of stakeholders, clients and regulatory bodies ($\rho = 0.915$), consultants and government ($\rho = 0.794$), and contractors and government ($\rho = 0.655$) show high levels of agreement, suggested that these groups perceive regulatory issues similarly. Some groups, such as clients and contractors ($\rho = 0.321$), consultants and regulatory bodies ($\rho = 0.267$), and contractors and regulatory bodies ($\rho = 0.055$), show weak positive correlations, reflects differences in priorities and concerns based on their respective roles in the construction process. Addressing these discrepancies through improved communication and policy interventions could help align the interests of all parties involved and improve the overall regulatory environment for

As shown in Table 4.8, the factor score analysis of the significant variables has revealed two components, the variance explained values (65.12% for component 1 and 10.01% for component 2, totaling 75.13%) suggest that these components together account for a substantial portion of the challenges experienced by contractors. To reflect the variables that cluster together, these components have been designated as follows: component 1 (regulatory frameworks and administrative inefficiencies) and component 2 (socio-political influences and corruption within the system).

**Table 4. 8 Factor analysis of variables related to regulatory and legal issues**

| Regulatory and Legal Issues Challenges | Component | |
|---|---|---|
| | 1 | 2 |
| Efficiency of registration system (firms and professionals) | 0.874 | |
| Capacity of regulatory bodies, i.e. relevant government departments | 0.847 | |
| Enforcement/ proper guide of the policy and regulations | 0.731 | 0.454 |
| Instability & dynamism of regulatory authorities and institutes | 0.73 | 0.474 |
| Absence of clear policy and regulations to properly guide the industry | 0.691 | 0.432 |
| Suitability of the applicable Procurement system | 0.669 | 0.354 |
| Government intervention | | 0.9 |
| Government bureaucracy | 0.367 | 0.821 |
| Political influence on government policy | 0.446 | 0.779 |
| Corruption and lack of transparency | 0.352 | 0.763 |
| Variance explained % | 65.12% | 10.01% |
| Cumulative Variance explained % | 75.13% | |
| Factor Score | 3.53 | 2.71 |

***Source: Survey result and own computation (2025)***

## Regulatory frameworks and Administrative inefficiencies

The result revealed that, this component was supported by its strong loadings for variables such as the efficiency of registration system (.874), capacity of regulatory bodies (.847), enforcement/proper guidance of policies and regulations (.731), instability and dynamism of regulatory authorities and institutes (.730), absence of clear policy and regulations to guide the industry (.691) and suitability of the applicable procurement system (.669) suggested that systemic inefficiencies in regulatory frameworks are a major driver of poor performance among local contractors. These issues affect the overall competitiveness and efficiency of local contractors. These companies do face unique challenges within their business environment within political, administrative and legal frameworks (Ofori, 2015) cited by (Shwala, 2018).

A cumbersome or delayed registration process hinders contractors' ability to initiate projects swiftly. This was confirmed by the group of stakeholders response that a mean value 3.44 and (.874). The next most high loading on capacity of regulatory bodies with mean 3.58 and (.847) suggested that the regulatory bodies lack sufficient capacity to effectively oversee and regulate the industry.

The group of stakeholders implies that the importance of policy enforcement and proper guidance to ensure contractors can operate in a fair and structured environment. Weak enforcement undermines regulatory credibility and leads to compliance challenges. This was confirmed with the mean 3.47 and (.731).

The instability of regulatory bodies with mean 3.63 and (.730) further exacerbates the challenges faced by contractors. Fluctuating leadership or lack of continuity in regulatory policies can create an uncertain business environment, which negatively impacts contractors' long-term planning and project execution. Khoza 2008) cited by (Mosisa, 2013)remarked that inconsistent procurement and delivery practices and policy environment by clients and consultants also impede the development of contractors.

A clear regulatory framework is crucial for providing direction to industry stakeholders in which the result indicated with a mean 3.65 and (.691). Without clear policies, contractors struggle to understand the rules and regulations governing the construction sector, which leads to operational difficulties and delays. Dissanayaka & Kumaraswamy (1999) quoted by (Kassie, 2019) mentioned that one of the principle reasons for the construction industry's poor performance has been attributed to the inappropriateness of the chosen procurement system.

As the study reflected with mean 3.42 and (.669), the suitability of procurement systems is vital for ensuring smooth project execution. When procurement processes are poorly designed or difficult to navigate, they create delays and inefficiencies that harm contractors' ability to compete effectively in the market. The study conducted by (Dereje & Mengesha, 2023), stated that procurement agency policies and regulations should be revised also review laws that hinder the progress of Domestic Contractors.

### Socio-political influences and Corruption within the system.

The result revealed the next component was supported by its variables such as government intervention (.900), government bureaucracy (.821), and political influence on government policy (.779) load heavily on this component, indicated that the political and bureaucratic environment is a significant barrier to the effective functioning of contractors. Ofori (2015) cited by (Shwala, 2018)revealed in his study that initiatives for developing construction companies in the poorer countries began in the 1970s when it became apparent that the performance of companies was a major impediment to the national socio-economic development efforts of these countries.

As observed from the result corruption and lack of transparency with mean 4.14 and (.763) topped the list of regulatory challenges across all stakeholder groups, highlighting the detrimental effect that corruption has on the integrity and competitiveness of the construction sector in Ethiopia. There were many construction site officials who

complained of problems influenced by corruption in Ethiopia(Bharti, 2023). Bureaucratic hurdles remain a significant challenge in the construction sector with mean 4.06 and (.821). The lengthy and often opaque decision making processes within government institutions create delays, increase administrative costs, and complicate contractors' ability to execute projects on time and within budget.

The other main factor under this component is political factors that influence government policies mean 3.97 and (.779) affect contractors by introducing uncertainty and unpredictability into regulatory processes. The result suggested that political dynamics heavily influence regulatory processes, which can create an unstable environment for contractors. The issue is that development-related decisions may be made to protect or establish economic and political power over some groups to dominate others(Bharti, 2023). Moreover, government intervention has the highest loading in this component (.900) and mean 3.97, highlighting how political decisions and actions significantly affect contractors' operations. Excessive or misguided government intervention can disrupt the market, leading to delays, increased costs, and a lack of transparency. The political elites and entrepreneurs' nexus may be legal in the country but such a kind of coalition of both groups is deeply involved in corruption and this kind of ties between businessmen and leaders distorts decision-making(Bharti, 2023).

### 4.3.3. Technical Expertise Challenges

Technical expertise is another critical area where local contractors face significant challenges. Leadership and team communication problems (mean: 3.80) were ranked highest, indicated that internal organizational issues like poor communication, leadership, and team dynamics significantly impact project success**.** Limited management capabilities (mean: 3.80) and poor information management (mean: 3.76) are also notable, indicated a need for more skilled personnel and better management systems. Furthermore, the application of information technology (mean: 3.65) was seen as insufficient, limiting the ability of local contractors to adopt efficient systems and processes. The aggregate rank analysis reveals the relative importance of various challenges as perceived by different stakeholders.

**Table 4. 9 Descriptive statistics of technical expertise challenging variables**

| Challenging variables | Client/owner | Consultant | Government official | Local contractor | Regulatory body | Total | One-Sample Test |
|---|---|---|---|---|---|---|---|

| | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Leadership and team communication problem | 4.43 | 1 | 3.77 | 1 | 4.11 | 6 | 3.82 | 3 | 2.60 | 4 | **3.80** | **1** | **0.000** |
| Limited management capabilities/ skills | 4.21 | 2 | 3.00 | 6 | 3.89 | 8 | 4.06 | 1 | 2.90 | 3 | **3.80** | **2** | **0.000** |
| Poor information management i.e. poor documentation and lack of organized data | 3.64 | 4 | 3.69 | 2 | 4.00 | 7 | 4.02 | 2 | 2.50 | 5 | **3.76** | **3** | **0.000** |
| Less application of information technology in the industry | 4.21 | 2 | 3.46 | 4 | 3.67 | 9 | 3.69 | 4 | 2.90 | 3 | **3.65** | **4** | **0.000** |
| Communication between Government and Contractors | 4.21 | 2 | 3.38 | 5 | 4.22 | 5 | 3.67 | 5 | 2.60 | 4 | **3.65** | **4** | **0.000** |
| Collaboration and Partnerships | 4.00 | 3 | 2.77 | 9 | 4.44 | 3 | 3.65 | 6 | 3.20 | 2 | **3.61** | **5** | **0.000** |
| Influence of senior construction manager perceptions | 4.00 | 3 | 3.54 | 3 | 4.11 | 6 | 3.55 | 8 | 2.90 | 3 | **3.60** | **6** | **0.000** |
| Appropriateness of training and education availability | 4.00 | 3 | 2.54 | 10 | 4.67 | 1 | 3.59 | 7 | 2.60 | 4 | **3.51** | **7** | **0.000** |
| Lack of competent and experienced professionals in the field | 4.21 | 2 | 2.92 | 7 | 4.67 | 1 | 3.29 | 10 | 3.20 | 2 | **3.49** | **8** | **0.000** |
| Limited technical knowledge | 3.43 | 5 | 2.77 | 9 | 4.33 | 4 | 3.39 | 9 | 2.60 | 4 | **3.32** | **9** | **0.000** |
| Skilled labour high turnover | 3.14 | 6 | 2.85 | 8 | 4.56 | 2 | 3.24 | 11 | 3.30 | 1 | **3.30** | **10** | **0.000** |
| Shortage of skilled operators | 3.14 | 6 | 3.54 | 3 | 3.44 | 10 | 3.20 | 12 | 3.30 | 1 | **3.27** | **11** | **0.000** |

***Source: Survey result and own computation (2025)***

As in the Table of appendix B (3) below displays the rho's (ρ) between different groups of respondents. The very strong positive correlation of client & regulatory body (ρ = 0.934), consultant & contractor (ρ = 0.717), government & regulatory body (ρ = 0.685),

indicated that a near-perfect alignment in the understanding of technical expertise required by both Clients and Regulatory Bodies. Similarly, moderate and week positive correlation between client & consultant with ($\rho$ = 0.444), client & government ($\rho$ = 0.500), client & contractor ($\rho$ = 0.469), consultant & regulatory body ($\rho$ = 0.427), and contractor & regulatory body ($\rho$ = 0.458), consultant & government ($\rho$ = 0.070), government & contractor ($\rho$ = 0.080) suggested some level of agreement between the pairs but also reflect notable differences in perspectives. Each group tends to prioritize different aspects of technical expertise depending on their role in the construction process.

Addressing these discrepancies through improved communication and collaboration could help bridge the gap in perceptions and improve overall outcomes in the construction

As shown in Table 4.10, the factor analysis conducted on the variables related to technical expertise in the construction industry reveals two primary components that significantly affect contractor performance. To reflect the variables that cluster together, these components accounts for a total variance 67.11% have been designated as follows: component 1(management capabilities and organizational issues (factor score: 3.67) accounts for a variance 39.80% and component 2 (human resource and technical knowledge issues (factor score: 3.35) accounts for a variance 27.30% demonstrating that a significant proportion of the variance can be attributed to these two key factors.

**Table 4. 10 Factor analysis of variables related to technical expertise**

| **Technical Expertise Variables** | **Components** | |
|---|---|---|
| | **1** | **2** |
| Limited management capabilities/skills | 0.854 | |
| Leadership and team communication problem | 0.811 | |
| Less application of information technology | 0.789 | |
| Poor information management | 0.742 | |
| Collaboration and Partnerships | 0.728 | |
| Communication between Government and Contractors | 0.701 | 0.327 |
| Appropriateness of training and education | 0.65 | 0.55 |
| Influence of senior construction manager perceptions | 0.637 | 0.345 |
| Skilled labour high turnover | | 0.823 |
| Lack of competent and experienced professionals | 0.352 | 0.789 |
| Limited technical knowledge | 0.427 | 0.762 |
| Shortage of skilled operators | | 0.759 |

| | | |
|---|---|---|
| Variance explained % | 39.80% | 27.30% |
| Cumulative Variance explained % | | 67.11% |
| Factor Score | 3.67 | 3.35 |

***Source: Survey result and own computation (2025)***

## Management Capabilities and Organizational Issues

The highest loading variable under this component is limited management capabilities/skills (.854) with mean 3.80 suggested that many contractors face significant challenges related to management capabilities. A lack of cohesive leadership and poor communication can result in misunderstandings, conflict, and inefficiencies that hinder project progress mean 3.80 and (.811). The relatively high loading (.789) and mean 3.65 on this variable indicates that the underutilization of IT tools such as project management software, Building Information Modeling (BIM), or digital documentation limits contractors' ability to streamline processes and manage projects effectively.

In addition, effective information management systems are critical for ensuring that all project stakeholders have access to up-to-date and accurate data, but poor systems hinder decision-making and project coordination indicated by the high loading (.742) and mean 3.76. The ability to collaborate with other stakeholders, including subcontractors, suppliers, and clients, is key to project success. This weak collaboration and partnerships can result in inefficiencies, delays, and suboptimal project outcomes in reflected by the study with mean 3.61 and (.728). The result also indicated that lack of effective communication between government agencies and contractors with mean 3.65 and (.701) can result in misunderstandings, delays in permits, and other administrative issues that affect project timelines. This variable suggested that improving communication channels between contractors and government bodies could alleviate many operational challenges. The variable with mean 3.51 and (.650) indicated that while training and education are important, there is still room for improvement in ensuring that the training provided aligns with the current needs of the industry. Undeniably, senior management's perceptions and attitudes towards technical expertise variable mean 3.60 and (.637) can influence decision-making processes and project execution.

## Human Resource and Technical Knowledge Issues

This finding highlights the technical knowledge and human resource challenges that contractors face. The variables strongly loading on this component include: A high turnover rate among skilled labor with mean 3.3 and (.823) is a significant challenge in

the construction industry. When skilled workers leave the company, it results in a loss of expertise and continuity, which can delay projects and increase costs. This issue is often driven by factors such as poor working conditions, better opportunities elsewhere, or lack of career advancement. The construction industry in Ethiopia faces a shortage of competent and experienced professionals which reflected by the group of stakeholders mean 3.49 and (.789). This mean that without these key players, contractors struggle to execute projects efficiently, especially for complex tasks that require high levels of expertise. The limited technical knowledge (.762) and mean 3.32 variable suggested that many contractors face challenges related to the technical knowledge required to complete projects to industry standards. The shortage of skilled operators ranked last in the variables list mean 3.27 and (.759), but still further contributes to delays and inefficiencies. Skilled operators are crucial for maintaining project timelines and ensuring that the construction process runs smoothly.

### 4.3.4. Infrastructure issues Challenges

The result indicated in the table below infrastructure challenges are high on the agenda for local contractors, particularly the lack of infrastructure and job opportunities (mean: 3.59), underscores the lack of foundational support for local contractors to thrive in a competitive environment. The dominance of overseas contractors (mean: 3.49) in the infrastructure sector is also problematic, as it limits opportunities for local businesses to engage in significant projects.

**Table 4. 11 Descriptive statistics of infrastructure issues challenging variables**

| Challenging of variables | Client/owner | | Consultant | | Government official | | Local contractor | | Regulatory body | | Total | | One-Sample Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Sig. (2-tailed) |
| Lack of infrastructure and Job Opportunities access | 4.00 | 1 | 3.46 | 1 | 3.89 | 1 | 3.67 | 2 | 2.20 | 1 | **3.56** | **1** | **0.000** |
| Infrastructure dominated by overseas contractors | 3.14 | 2 | 3.46 | 1 | 3.89 | 1 | 3.78 | 1 | 2.20 | 1 | **3.49** | **2** | **0.000** |

***Source: Survey result and own computation (2025)***

As in the Table of appendix B (4) below displays the rho's (ρ) between different groups of respondent's results for infrastructure issues. The result revealed that very strong

positive correlations (ρ = 1.000) among groups are indicates very strong alignment in their rankings of infrastructure issues, leading to a shared understanding of the challenges faced. The no correlation (ρ =-) and (ρ = -1.000) among groups suggests entirely different perspectives, reflecting their distinct roles and priorities within the infrastructure project lifecycle. This highlighting the differences in their perceptions and priorities regarding infrastructure challenges.

As shown in Table 4.12, the factor analysis performed on the variables related to infrastructure issues underscored a singular component variance explained 83.06% to the underlying factor. This factor can be interpreted as infrastructure deficiencies and the dominance of overseas contractors (factor score: 3.53) that affect local contractors, with the dominance of foreign contractors being a significant component of the problem.

**Table 4. 12 Factor analysis of variables related to infrastructure issues**

| **Infrastructure Issues Variables** | **Component 1** |
|---|---|
| Lack of infrastructure and Job Opportunities access | 0.861 |
| Infrastructure dominated by overseas contractors | 0.861 |
| Variance explained % | 83.06% |
| Cumulative Variance explained % | 83.06% |
| Factor Score | 3.53 |

***Source: Survey result and own computation (2025)***

## Infrastructure deficiencies and the dominance of overseas contractors

The two key variables strongly loading on this component include: Lack of infrastructure and job opportunities access (.861) and infrastructure dominated by overseas contractors (.861)**.** Lack of infrastructure and job opportunities access mean 3.56 and (.861)**,** variable highlights the critical gap in infrastructure construction projects within the country. Once contractors have completed a project they usually have to wait for some time before receiving the next project (Mbonane, 2005:16, MUDC 2012). Furthermore, the absence of job opportunities exacerbates the situation by limiting the scope for construction work and hindering the growth of local contractors.

Similarly, infrastructure dominated by overseas contractors mean 3.49 and (.861) ranked second by the group of stakeholders emphasized the dominance of overseas contractors in the infrastructure sector. As (Wubet et al., 2023) cited (ERA, 2016), In Ethiopia foreign contractors and consultants account for major proportions of the market share in road sector (about 58% in terms of value), but nearly 100% is executed by local contractors as far as building is concerned. The fact that foreign firms often dominate

large-scale infrastructure projects in Ethiopia suggests a dependency on external expertise and capital. This situation creates a barrier for local contractors, limiting their participation in major infrastructure developments. The findings from this analysis emphasize the need for strategic interventions that foster a more equitable and competitive environment for local contractors in the face of global competition.

### 4.3.5. Market Dynamics Challenges

Market dynamics, especially fluctuations in material prices (mean: 3.98), ranked first present a persistent challenge. These price changes disrupt budgeting, scheduling, and overall project cost control. Similarly, inefficiency of equipment and plant technology (mean: 3.79) was highlighted and ranked as second major issue, with local contractors often unable to access modern, efficient technology. The availability of equipment and materials (mean: 3.69) was also a significant concern, affecting the timely completion of projects, all of which are ranked highly across all stakeholders.

**Table 4. 13 Descriptive statistics of market dynamics challenging variables**

| Challenging of variables | Client/owner | | Consultant | | Government official | | Local contractor | | Regulatory body | | Total | | One-Sample Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Sig. (2-tailed) |
| Fluctuations in material prices | 4.43 | 2 | 3.23 | 1 | 4.56 | 2 | 4.24 | 1 | 2.50 | 2 | **3.98** | **1** | **0.000** |
| Inefficiency of equipment and plant technology | 4.50 | 1 | 2.92 | 3 | 4.33 | 4 | 3.96 | 2 | 2.60 | 1 | **3.79** | **2** | **0.000** |
| Availability of equipment and materials | 4.21 | 3 | 3.08 | 2 | 4.67 | 1 | 3.76 | 4 | 2.50 | 2 | **3.69** | **3** | **0.000** |
| Availability of plant & machinery | 4.21 | 3 | 2.77 | 4 | 4.44 | 3 | 3.80 | 3 | 2.50 | 2 | **3.65** | **4** | **0.000** |

***Source: Survey result and own computation (2025)***

As in the Table of appendix B (5) below displays the Spearman's rank correlation coefficients (ρ) between different groups of respondent's results for market dynamics.

The rho's results reveal varied levels of alignment between the different groups in understanding market dynamics. Stronger correlations are found between groups that

share similar roles and objectives (e.g., client & contractor**,** consultant & government**),** while weaker or negative correlations arise when groups have different priorities or focuses (e.g., government & contractor**,** consultant & regulatory body).

Understanding these correlations can help identify areas of misalignment in market dynamics and suggest opportunities for improving communication and collaboration, especially between groups with weaker or negative correlations.

As shown in Table 4.14, The Factor Analysis of variables related to market dynamics reveals a single dominant Component 1(equipment, material availability, and technological efficiency (factor score: 3.78) which account for 85.95% variance explained suggests that it plays a significant role in shaping the construction sector's market conditions.

**Table 4. 14 Factor analysis of variables related to market dynamics**

| **Market Dynamics Variables** | **Component 1** |
|---|---|
| Availability of equipment and materials | 0.941 |
| Availability of plant & machinery | 0.941 |
| Inefficiency of equipment and plant technology | 0.703 |
| Fluctuations in material prices | 0.693 |
| Variance explained % | 85.95% |
| Cumulative Variance explained % | 85.95% |
| Factor Score | 3.78 |

***Source: Survey result and own computation (2025)***

## Equipment, Material Availability, and Technological Efficiency

The factor score analysis revealed that this component captures the availability and efficiency of key resources such as equipment, materials, and technology, as well as the volatility in material prices within the construction market. These factors collectively have a significant influence on contractors' performance. The high loading on availability of equipment and materials variable underscores the critical role mean 3.69 and (.941) that the availability of essential construction materials and equipment plays in project execution.

In addition, the availability of plant and machinery mean 3.65 and (.941) was another crucial factor that influences local contractor’s construction project efficiency. The high loading suggests that contractors who have access to modern and reliable plant and machinery are likely to outperform those who face equipment shortages or technological constraints. This was confirmed with (Mitikie et al., 2017) study that the main risk

factors that affect the project performance very high are equipment/material failure, labor poor productivity, the non-availability of equipment and material.

Similarly, inefficiency of equipment and plant technology variable mean 3.79 and (.703) addresses the issue of outdated or inefficient equipment and plant technology. Even when equipment and machinery are available, their inefficiency or outdated technology can cause significant setbacks. Study by (Faridi & El-Sayegh, 2006), explained that the main factors impacting on project performance in developing countries are obsolete machineries and equipment and suffered financial ruin and bankruptcy because of delays in payment.

Furthermore, the fluctuations in material prices variable mean 3.98 and (.693) reflects the volatility in material prices, which poses a significant risk to contractors, especially in long-term projects. The relatively high loading on this variable indicates that price volatility is a major concern for contractors and can significantly affect their ability to plan and execute projects effectively. According to a survey conducted by MOTI, the demand for cement in the country in 2005/06 was estimated at about 4.7 million tons whereas the production of cement was 2.7 million tons, the gap being 2 million tons. This indicates that the gap must have been bridged by import since otherwise construction projects which were unable to get cement would have been forced to postpone their construction activities to future years with cost implications. He added that the unit value of iron bar total value of iron bar /total quantity imported) has increased from Birr 2.71 in 2000 to about Birr 6.33 in 2007 thereby depicting a 133.6 percentage point increase over the period. The increase in both the volume of iron bar and its price has serious foreign exchange implications on a foreign exchange constrained country, like Ethiopia.

Without reliable access to materials, equipment, and technology, contractors cannot execute projects effectively, and price fluctuations further amplify the risk and uncertainty they face.

## 4.4. Relationship of Poor Performance and the Challenge Variables

The result in the table below indicated that the local contractor poor performance was often compromised by factors such as cost overruns (mean: 4.24) and project delays (mean: 4.24), poor relationships among key stakeholders (mean: 4.02), Inconsistence of practice in the industry (mean: 3.95), Failure to meet quality standards (mean: 3.94) all

of which are ranked highly across all stakeholders. These factors lead to, negatively affecting the overall performance of contractors, with significant repercussions for both contractors, clients and the nation.

**Table 4. 15 Descriptive statistics of poor performance challenging variables**

| Challenging of variables | Client/ owner | | Consultant | | Government official | | Local contractor | | Regulatory body | | Total | | One-Sample Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Sig. (2-tailed) |
| Cost overruns | 4.21 | 2 | 3.54 | 3 | 4.56 | 1 | 4.55 | 1 | 3.30 | 2 | **4.24** | **1** | **0.000** |
| Project delays and failures to meet schedules | 4.00 | 3 | 3.85 | 1 | 4.56 | 2 | 4.55 | 1 | 3.20 | 3 | **4.24** | **1** | **0.000** |
| Poor relationship among key stakeholders | 4.21 | 2 | 3.69 | 2 | 4.44 | 3 | 4.25 | 2 | 2.60 | 5 | **4.02** | **2** | **0.000** |
| Inconsistence of practice in the industry | 3.93 | 4 | 3.46 | 4 | 4.22 | 5 | 4.10 | 5 | 3.60 | 1 | **3.95** | **3** | **0.000** |
| Failure to meet quality standards | 4.43 | 1 | 3.69 | 2 | 4.22 | 5 | 4.08 | 6 | 2.60 | 5 | **3.94** | **4** | **0.000** |
| Reduced profitability | 3.79 | 5 | 3.00 | 6 | 4.44 | 3 | 4.20 | 3 | 3.30 | 2 | **3.91** | **5** | **0.000** |
| Lack of collaborative culture in the industry | 4.21 | 2 | 3.54 | 3 | 4.33 | 4 | 4.02 | 7 | 2.90 | 4 | **3.90** | **6** | **0.000** |
| Reduced competitiveness/week capacity | 3.50 | 6 | 3.23 | 5 | 4.22 | 5 | 4.20 | 3 | 2.90 | 4 | **3.84** | **7** | **0.000** |
| Low equipment productivity | 3.14 | 9 | 3.69 | 2 | 4.44 | 3 | 4.00 | 8 | 2.90 | 4 | **3.76** | **8** | **0.000** |
| Reworks/ poor workmanship | 3.43 | 7 | 3.54 | 3 | 3.67 | 6 | 4.16 | 4 | 2.50 | 6 | **3.75** | **9** | **0.000** |
| Low labor productivity | 3.36 | 8 | 3.23 | 5 | 4.56 | 1 | 4.00 | 8 | 2.50 | 6 | **3.70** | **10** | **0.000** |

***Source: Survey result and own computation (2025)***

As in the Table of appendix B (6) below displays the rho's (ρ) between different groups of respondent's results for poor performance.

The factor analysis revealed that the strong positive correlation between groups of stakeholders which are consultant & government (ρ = 0.764), government & regulatory Body (ρ = 0.773), consultant & regulatory body (ρ = 0.709), contractor & regulatory body (ρ = 0.700), client & contractor (ρ = 0.641), client & regulatory body (ρ = 0.632) and client & consultant (ρ = 0.623) in their views on what constitutes poor performance. The groups involved in regulatory and policy enforcement (government, regulatory bodies, consultants) exhibit particularly strong correlations, as they share common concerns regarding compliance and standards. The moderate positive correlation

between groups of client & government (ρ = 0.477), consultant & contractor (ρ = 0.564) and government & contractor (ρ = 0.573**)**, there are differences in how they perceive performance issues due to their distinct roles.

As shown in Table 4.16, The factor analysis of variables related with poor performance contractors in the construction industry reveals two distinct components that account for a cumulative variance of 70.79%, component 1(operational inefficiencies and stakeholder issues **(**factor score: 4.15) accounts for a variance 42.34 % and component 2 (financial performance failure (factor score: 3.86) accounts for a variance 28.45% which are both indicators of poor contractor performance.

**Table 4. 16 Factor analysis of variables related to poor performance**

| **Variables Related to Poor Performance** | **Components** | |
|---|---|---|
| | **1** | **2** |
| Poor relationship among key stakeholders | 0.864 | |
| Reworks/poor workmanship | 0.846 | 0.303 |
| Failure to meet quality standards | 0.815 | |
| Lack of collaborative culture in the industry | 0.763 | 0.342 |
| Low labor productivity | 0.729 | |
| Low equipment productivity | 0.639 | 0.304 |
| Inconsistency of practice in the industry | 0.586 | 0.476 |
| Reduced profitability | | 0.941 |
| Cost overruns | | 0.812 |
| Reduced competitiveness/week capacity | 0.472 | 0.731 |
| Project delays and failures to meet schedules | 0.595 | 0.607 |
| Variance explained % | 42.34% | 28.45% |
| Cumulative Variance explained % | | 70.79% |
| Factor Score | 4.15 | 3.86 |

***Source: Survey result and own computation (2025)***

The top three variables on each factor dimension loading strongly on these two component are include:

**Poor Relationship among Key Stakeholders:**

The high loading on this variable among key stakeholders mean 4.02 and (.864) indicated that one of the main factors contributing to poor performance is the lack of effective communication and collaboration among stakeholders such as clients, contractors, consultants, and regulatory bodies. Westland (2006) reviewed by (Kassie, 2019) remarked that without a formal communications management process in place, it will be difficult to ensure that project stakeholders receive the right information at the right time. Collaborating with small businesses, supply chain partners should focus on building relationships in order to create resilience in the supply chain (Shumuye, 2015).

**Inconsistency of Practice in the Industry**:

Inconsistency of practice in the industry mean 3.95 and (.586) variable suggests that the construction industry lacks standardized practices or consistent procedures, leading to discrepancies in how work is performed across different projects.

**Failure to Meet Quality Standards**:

Failure to meet quality standards mean 3.94 and (.815) variable reflects the failure to meet agreed-upon quality standards, which is directly related to rework, project delays, and client dissatisfaction. Study conducted by (Asiedu, 2014), reflected that the problem is that, what constitute performance satisfaction has been flawed with obvious misconceptions and is erroneously positioned within the context of project success or failure dichotomy.

**Cost Overruns:**

Cost overruns mean 4.24 and (.812) are a critical issue in construction projects, often arising from inefficiencies such as delayed schedules, reworks, and changes in scope. The results of case studies conducted by (Regassa, 2015) on the ten road maintenance districts indicated that out of the 49 routine and periodic road projects investigated, 30 projects (62.5%) suffered cost overrun while 15 projects (30.6%) suffered cost under run in their execution. Research conducted by (Mustefa, 2015) for 10 completed road construction projects in Addis Ababa indicated that 100% of the road construction projects suffered both time and cost overrun. The rate of time overrun ranges from a minimum of 25% to the maximum of 264.38% of the contract amount and cost overrun ranges from a minimum of 4.11% to the maximum of 135.06% of the contract amount. Technical expertise, past success, time in business, work methods and working capital significantly impact on contractor performance across time, cost and quality success objectives(Al-zahrani, 2013) cited (Doloi, 2009).

**Project Delays and Failures to Meet Schedules**

Project delays and failures to meet schedules mean 4.24 and (.607), are one of the most prominent consequences of poor performance. They are often linked to low productivity, poor project planning, and inefficient resource allocation. Delays in construction projects not only harm a contractor's reputation but also increase costs and lead to client dissatisfaction. The amount of schedule slippage selected in projects Ethiopia ranges between 61-80% and that of planed costs and other variables such as risk, quality,

resources utilization and safety deviates in the range 21-40% from predetermined requirements or anticipated at the beginning of the project(Ayalew et al., 2016).

**Reduced Profitability**

The high loading on reduced profitability mean 3.91 and (.941) highlighted that poor performance directly affects a contractor's ability to generate profits. Inefficiencies in operations, poor workmanship, and then delayed project delivery lead to financial losses, eroding profit margins. Contractors who fail to improve operational efficiency often struggle to remain competitive in the market. Low labor productivity with mean 3.70 and (.729) reflects inefficiencies in the workforce, which can be due to poor training, low motivation, inadequate management, or insufficient skilled labor. Low equipment productivity mean 3.76 and (.639) can arise from outdated or poorly maintained machinery or inefficient use of available equipment. Study conducted by (Mitikie et al., 2017), remarked equipment/material failure, labor poor productivity, the non-availability of equipment and material are the main risk factors that affect the project performance very high are. This was studied (Al-zahrani, 2013), that obsolete machineries and equipment has been giving rise to delays in the completion time of construction projects and claimed additional budget.

The Table 4.17 below presents the responses from various stakeholders in the construction industry regarding the approximate percentage increase in project costs attributed to the challenges faced by local contractors. According to various studies taken in the literature review, the data was categorized into six ranges of percentage increases in project costs, and responses are provided by five different roles within the construction industry: client/owner, consultant, government official, local contractor, and regulatory body.

**Table 4. 17 Percentage increase costs due to the challenges faced by LC.**

| Percentage increase(%) in project costs | 1.Role in the construction industry | | | | | |
|---|---|---|---|---|---|---|
| | Client/owner | Consultant | Government official | Local contractor | Regulatory body | Total |
| 0-10 | 0 | 0 | 0 | 6 | 0 | 6 |
| 11-20 | 0 | 3 | 3 | 8 | 0 | 14 |
| 21-30 | 3 | 5 | 0 | 14 | 0 | 22 |
| 31-40 | 0 | 0 | 2 | 4 | 3 | 9 |
| 41-50 | 3 | 2 | 2 | 4 | 3 | 14 |
| 51+ | 8 | 3 | 2 | 15 | 4 | 32 |
| Total | 14 | 13 | 9 | 51 | 10 | 97 |

***Source: Survey result and own computation (2025)***

The data strongly indicated that the challenges faced by local contractors are leading to significant increases in project costs, with responses largely clustered in the 21-30%, 41-50%, and 51%+ categories. Local contractors themselves are the most aware of these increases, but the perceptions are consistent across other stakeholders, including clients/owners, consultants, and government officials. The result was perceived severity of cost increases that across all stakeholder groups, the majority perceive cost increases as significant, with the most common response being in the 51% and above category, especially among local contractors (15 responses, 29%) and client/owners (8 responses, 57%). This suggested that the challenges faced by local contractors are believed to significantly raise project costs, with local contractors themselves most aware of this. While the average magnitude of cost overrun for selected project extended was nearly 21.52%, this is a significant amount when it compared with the number of projects(Belachew et al., 2017).

Hence, this study result found from factor analysis score that the key poor performance indicator variables are as the table 4.24 below.

**Table 4. 18 Factor score result of key poor performance challenge variables**

| No | Poor Performance Indicator Variables | Mean Rank | Factor Score Loaded | Aggregate Rank |
|---|---|---|---|---|
| **I** | **Operational Inefficiencies and Stakeholder Issues (Factor Score: 4.15)** | | | |
| 1 | Poor relationship among key stakeholders | 4.02 | 0.864 | 2 |
| 2 | Inconsistency of practice in the industry | 3.95 | 0.586 | 3 |
| 3 | Failure to meet quality standards | 3.94 | 0.815 | 4 |
| | | | | |
| **II** | **Financial Performance Failure (Factor Score: 3.86)** | | | |
| 4 | Cost overruns | 4.24 | 0.812 | 1 |
| 5 | Project delays and failures to meet schedules | 4.24 | 0.607 | 1 |
| 6 | Reduced profitability | 3.91 | 0.941 | 5 |

***Source: Survey result and own computation (2025)***

## 4.5. Economic Impact Analysis of the Variables

The result in the table below indicated that the economic impact of challenges on the local construction sector is profound, with aggregate mean value, slower sector growth **(**mean: 4.07) identified as the most pressing concern. The reduced competitiveness of the economy (mean: 3.96) and unreliable supply chains (mean: 3.95) also significantly affect

local contractors' capacity to compete internationally. Reduced investment in construction (mean: 3.89) and Influence of culture, perception and attitude of stakeholders (mean: 3.81) all of which are ranked highly across all stakeholders exacerbate the challenges, leading to slower industry development and economic inefficiencies respectively.

**Table 4. 19 Descriptive statistics of Economic Impact challenging variables**

| Challenging of variables | Client/owner | | Consultant | | Government official | | Local contractor | | Regulatory body | | Total | | One-Sample Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Mean | RANK | Sig. (2-tailed) |
| Slower growth of the construction sector | 4.50 | 1 | 3.31 | 1 | 4.33 | 2 | 4.24 | 2 | 3.40 | 1 | **4.07** | **1** | **0.000** |
| Reduced competitiveness of the economy | 4.43 | 2 | 2.69 | 7 | 4.11 | 3 | 4.25 | 1 | 3.30 | 2 | **3.96** | **2** | **0.000** |
| Unreliable supply chain | 4.21 | 3 | 2.92 | 5 | 4.78 | 1 | 4.12 | 5 | 3.30 | 2 | **3.95** | **3** | **0.000** |
| Reduced investment in construction | 4.43 | 2 | 3.00 | 4 | 3.89 | 5 | 4.24 | 2 | 2.50 | 6 | **3.89** | **4** | **0.000** |
| Influence of culture, perception and attitude of stakeholders | 4.43 | 2 | 3.08 | 3 | 4.11 | 3 | 3.94 | 7 | 3.00 | 3 | **3.81** | **5** | **0.000** |
| Negative impact on gross domestic product(GDP) | 4.21 | 3 | 2.46 | 8 | 3.78 | 6 | 4.20 | 3 | 2.90 | 4 | **3.79** | **6** | **0.000** |
| Dependency on foreign aid | 4.00 | 4 | 2.85 | 6 | 3.78 | 6 | 4.18 | 4 | 2.80 | 5 | **3.79** | **6** | **0.000** |
| Dependence on overseas contractors | 4.50 | 1 | 2.69 | 7 | 4.00 | 4 | 4.02 | 6 | 2.90 | 4 | **3.79** | **6** | **0.000** |
| Lower employment in the industry | 4.21 | 3 | 3.15 | 2 | 3.78 | 6 | 3.92 | 8 | 2.90 | 4 | **3.74** | **7** | **0.000** |
| Influence of attitudes of | 3.93 | 5 | 3.08 | 3 | 3.78 | 6 | 4.02 | 6 | 2.50 | 6 | **3.70** | **8** | **0.000** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| overseas contracting staff | | | | | | | | | | | | | |

***Source: Survey result and own computation (2025)***

As in the Table of appendix B (7) below displays the rho's (ρ) between different groups of respondent's results for economic impact. The very strong positive correlation between client & regulatory body (ρ = 0.812) and government & regulatory body (ρ = 0.921), client & government (ρ = 0.709), consultant & regulatory body (ρ = 0.533), government & contractor (ρ = 0.600) and contractor & regulatory body (ρ = 0.606), the moderate positive correlation client & contractor (ρ = 0.503), consultant & government (ρ = 0.564**)** and consultant & regulatory body (ρ = 0.533**),** exhibited level of agreement regarding the economic impact of construction projects and weak positive correlation of client & consultant (ρ = 0.370) and consultant & contractor (ρ = 0.200**)** indicating limited alignment in their views on the economic impact of a project. The varying roles and priorities of each group contribute to these weak correlations.

As shown in Table 4.20, the factor analysis of variables related to economic impact, identifies a single dominant component explained variance with the 65.3% that reflects the economic consequences of the difficulties faced by the construction industry, which significantly influence broader economic indicators such as employment, investment, GDP, and competitiveness. The factor score of 3.85 indicates a strong presence of economic impacts that demand attention for the sector's overall improvement. The results revealed significant patterns among these challenges, helping identify key areas where interventions could improve sectoral performance and economic outcomes.

**Table 4. 20 Factor analysis of variables related to EI**

| **Variables Related to Economic Impact** | **Component 1** |
|---|---|
| Lower employment in the industry | 0.829 |
| Influence of culture, perception, and attitude of stakeholders | 0.752 |
| Negative impact on GDP | 0.904 |
| Dependency on foreign aid | 0.817 |
| Reduced investment in construction | 0.818 |
| Reduced competitiveness of the economy | 0.891 |
| Unreliable supply chain | 0.703 |
| Slower growth of the construction sector | 0.77 |
| Dependence on overseas contractors | 0.773 |
| Influence of attitudes of overseas contracting staff | 0.731 |
| Variance explained % | 65.30% |
| Cumulative Variance explained % | 65.30% |

| | |
|---|---|
| Factor Score | 3.85 |

***Source: Survey result and own computation (2025)***

## Broader Economic Consequences of Performance Challenges

This component summarizes a range of economic effects stemming from the performance and challenges of the construction industry. The variables in this component reflect how deficiencies in the sector affect key economic indicators such as employment, GDP, investment, and the competitiveness of the economy. The variables loading strongly on this component includes mainly the following top six factors:

This study result implicated that the slower growth of the construction sector mean 4.07 and (.770), represents the stagnation or contraction of a key economic driver. As (MUDC, 2012), reported lack of supportive institutional mechanisms in terms of financial credit facilities, equipment for hire and professional development hampering the performance and development of the industry.

A significant consequence of the construction sector's underperformance is the reduced competitiveness of the economy with mean 3.96 and (.891). According to (Desta, 2015), domestic contractors have limited capacity to meet the requirements of development partners, which has severely limited their competitiveness in projects implemented in collaboration with development partners. This poor performance in the construction sector leads to reduced investment in infrastructure projects as highlighted by the respondent with mean 3.89 and (.818). Mvubu & Thwala (2009:4) cited by (Shwala, 2018), remarked, delays in payment by clients can be identified as a major obstacle that affects the growth of contracting companies.

The unreliable supply chain mean 3.95 and (.703) in the construction industry impacts the broader economy by creating disruptions in material procurement and delivery. When construction projects face delays due to inconsistent supply chains, the economy is also affected because the flow of goods and services is hindered, leading to inefficiencies and increased operational costs. The construction contractors face risks and challenges in the context of complicated developments at home and abroad regarding war, frozen markets, supply disruption, and rising inflation, etc. (Enshassi et al., 2006).

The high loading on lower employment in the industry mean 3.74 and (.829), variable indicated that the challenges faced by the construction industry, such as inefficiencies and poor performance, lead to lower employment rates within the sector. (Hamid et al.,

2011) remarked that the demand of the foreign workers will still exist as long as the locals are not interested in working in the construction industry and willing to receive the similar wages as paid to the foreign workers.

The influence of culture, perception, and attitude of stakeholders mean 3.81 and (.752) variable suggested that the cultural and attitudinal factors of stakeholders (such as contractors, clients, and government bodies) have a significant impact on the economic performance of the construction industry.

The high loading on dependency on foreign aid mean 3.79 and (.817), variable reflected that the construction industry's challenges force the economy to become overly reliant on foreign aid and investment. According to (FDRE, 2010) inadequate domestic human and organizational capacity for infrastructure development has led to a dependency on foreign capacity, which has in turn undermined the pace and coverage of infrastructure delivery. This is important because local contractor drive economic activities (Ndabeni, 2008). Reduced activity in the industry leads to a decrease in national output and hampers economic development, as respondents implicated in this study mean 3.79 and (.904). The majority of the population in sub-Saharan Africa have little or no access to potable water, decent shelter, and health and education services(Zawdie & Langford, 2020).

The Table 4.21 below provides regarding the perceived percentage reduction in the construction sector's gross domestic product (GDP) growth due to the challenges faced by local contractors. The stakeholders were asked to estimate the reduction in GDP growth caused by these challenges, and their responses were categorized into six ranges. The total number of responses was 97, with varying perspectives from different roles within the construction industry. The analysis conducted through cross-tabulation data in SPSS reveals that local contractors, government officials, and regulatory bodies perceive the economic impact of poor contractor performance as being substantial, particularly in terms of GDP growth in the construction sector. The majority of respondents (28 out of 97) believe the impact to be in the 11-15% range, with a notable proportion (18 respondents) perceiving it as 26% or higher.

In contrast, clients/owners and consultants tend to have a less severe view of the issue, with many responses in the 0-5% and 6-10% ranges. The differences in perception are likely reflective of the different roles these stakeholders play in the industry. Contractors

and government officials are more likely to recognize the challenges at a deeper, systemic level, while clients and consultants are often more concerned with immediate project outcomes.

This result underscores the importance of addressing local contractor performance issues to foster economic growth and stability in Ethiopia's construction sector, as the majority of stakeholders acknowledge a significant economic impact from poor contractor performance.

**Table 4. 21 Percentage reduction in (GDP) due to the challenges faced by LC**

| Percentage reduction (% )in (GDP) | 1. Role in the construction industry | | | | | Total |
|---|---|---|---|---|---|---|
| | Client/owner | Consultant | Government official | Local contractor | Regulatory body | |
| 0-5 | 0 | 4 | 0 | 8 | 0 | 12 |
| 6-10 | 3 | 0 | 2 | 13 | 0 | 18 |
| 11-15 | 4 | 4 | 3 | 10 | 7 | 28 |
| 16-20 | 0 | 3 | 0 | 7 | 3 | 13 |
| 21-25 | 3 | 0 | 0 | 5 | 0 | 8 |
| 26+ | 4 | 2 | 4 | 8 | 0 | 18 |
| Total | 14 | 13 | 9 | 51 | 10 | 97 |

***Source: Survey result and own computation (2025)***

## 4.6. Causal relationship of the Challenges

### 4.6.1 Inferential Analysis

Under this section inferential analysis of the data collected is presented. As described above inferential analysis is conducted using correlation and regression analysis.

Accordingly, the researcher conducted a correlation and multiple regression analysis so as to test the relationship among independent variables and dependent variable. The regression analysis is conducted to know by how much the independent variable explains the dependent variable. As (Haile, 2022) stated that before going through the inferential analysis, it is better to test the assumptions of regression presented as follows.

### 4.6.2. Correlation Analysis

As highlighted in the above chapter three of correlations are the measure of the linear relationship between two variables. As described by Andy (2006), the correlation is a commonly used measure of the size of an effect: values of ± 0.1 represent a small effect, ± 0.3 is a medium effect and ± 0.5 is a large effect.

**Table 4. 22 rho's Correlation matrix between dependent and independent variables**

## Correlation

| Table …..Spearman's rho Correlations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Correlation | | (FC) | (RL) | (TE) | (II) | (MD) | (CPP) | (EI) |
| (FC) | Correlation Coefficient | 1 | .650** | .571** | .388** | .474** | .352** | .374** |
| | Sig. (2-tailed) | . | 0 | 0 | 0 | 0 | 0 | 0 |
| | N | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| (RL) | Correlation Coefficient | .650** | 1 | .644** | .513** | .566** | .440** | .470** |
| | Sig. (2-tailed) | 0 | . | 0 | 0 | 0 | 0 | 0 |
| | N | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| (TE) | Correlation Coefficient | .571** | .644** | 1 | .574** | .716** | .516** | .556** |
| | Sig. (2-tailed) | 0 | 0 | . | 0 | 0 | 0 | 0 |
| | N | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| (II) | Correlation Coefficient | .388** | .513** | .574** | 1 | .712** | .529** | .452** |
| | Sig. (2-tailed) | 0 | 0 | 0 | . | 0 | 0 | 0 |
| | N | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| (MD) | Correlation Coefficient | .474** | .566** | .716** | .712** | 1 | .469** | .529** |
| | Sig. (2-tailed) | 0 | 0 | 0 | 0 | . | 0 | 0 |
| | N | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| (CPP) | Correlation Coefficient | .352** | .440** | .516** | .529** | .469** | 1 | .565** |
| | Sig. (2-tailed) | 0 | 0 | 0 | 0 | 0 | . | 0 |
| | N | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| (EI) | Correlation Coefficient | .374** | .470** | .556** | .452** | .529** | .565** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | . |
| | N | 97 | 97 | 97 | 97 | 97 | 97 | 97 |

*Source: Survey result and own computation (2025)*

*. Correlation is significant at the 0.05 level (2-tailed).

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

*FC=Financial constraints* *RL=Regulatory and Legal Issues*
*TE=Technical Expertise* *II=Infrastructure Issues*
*MD=Market Dynamics* *CPP=Contractor Poor Performance Variables*
*EI=Economic Impact Variables*

The result indicated that, the Spearman's (rho) correlation matrix provides the relationships between the independent variables (FC, RL, TE, II, MD) and the dependent variables (CPP and EI). All correlations presented here are statistically significant (p-value < 0.05). The matrix presents the correlation coefficients (r) between each pair of variables, followed by their significance level (Sig. 2-tailed), which indicates whether the correlation is statistically significant. This provided correlation Coefficients which indicated the strength and direction of relationship. The correlation between each challenging factors and contractor poor performance and economic impact was seen in the above table. This analysis indicated that most of the relationships between the independent variables (FC, RL, TE, II, MD) and the dependent variables (CPP and EI) strongly positive and statistically significant.

### 4.6.3. Regression Analysis

The data collected from the respondents was used for the inferential analysis of the study. To evaluate and predict the impact of the challenging factors of the independent variables on the dependent variable, the researcher conducted a multiple regression analysis. This analysis was done to determine how much the independent variables account for the variation in the dependent variable. The model used to show this relationship is as explained in chapter 3 sub section 3.5.1.4, employed formula as following.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

To ensure reliable and valid results from the analysis, the following pre-regression assumptions and their corresponding results are presented in the next sections of this research paper.

#### 4.6.3.1 Reliability Analysis Regarding

For assessing the reliability of the questionnaire, the internal consistency was calculated using Cronbach's Alpha reliability test. This test measures how closely related a set of items, such as survey questions, are. The Cronbach's Alpha was computed for 54 ratable items related to each scale, and the results are shown in Table 4.23 below. Based on the SPSS data shown in, the overall Cronbach's Alpha coefficient for this study was found to be greater than 0.7 for all variables, confirming the internal consistency of the variables.

**Table 4. 23 Cronbach"s alpha (α) value of the research constructs**

| Questionnaire Section | Measured Constructs | N of Items | Alpha Value (α) |
|---|---|---|---|
| Key Performance Challenges | Financial constraints | 7 | 0.897 |
| | Regulatory and Legal Issues | 10 | 0.886 |
| | Technical Expertise | 11 | 0.877 |
| | Infrastructure issues | 2 | 0.889 |
| | Market Dynamics | 4 | 0.882 |
| Poor Performance Variables | Poor Performance indicator Variables | 11 | 0.891 |
| Economic Impact variables | Economic Impact variables | 9 | 0.895 |
| **Entire Questionnaire** | | **54** | **0.903** |

***Source: Survey result and own computation (2025)***

#### 4.6.3.2 Multi-collinearity Assumptions

The multi-collinearity test is used to detect strong correlations between two or more predictors in a regression model. This assumption can be assessed by analyzing tolerance

and the variance inflation factor (VIF). Multi-collinearity can affect any regression model with more than one predictor, and it occurs when two or more predictors measure overlapping aspects, making their effects indistinguishable.

**4.31 Multi-Collinearity Test**

| Model | | Collinearity Statistics | |
|---|---|---|---|
| | | Tolerance | VIF |
| 1 | (Constant) | | |
| | Financial constraints (FC) | 0.553 | 1.808 |
| | Regulatory and Legal Issues (RL) | 0.428 | 2.339 |
| | Technical Expertise (TE) | 0.317 | 3.158 |
| | Infrastructure Issues (II) | 0.403 | 2.48 |
| | Market Dynamics (MD) | 0.309 | 3.235 |
| | Contractor Poor Performance Variables(CPP) | 0.524 | 1.909 |

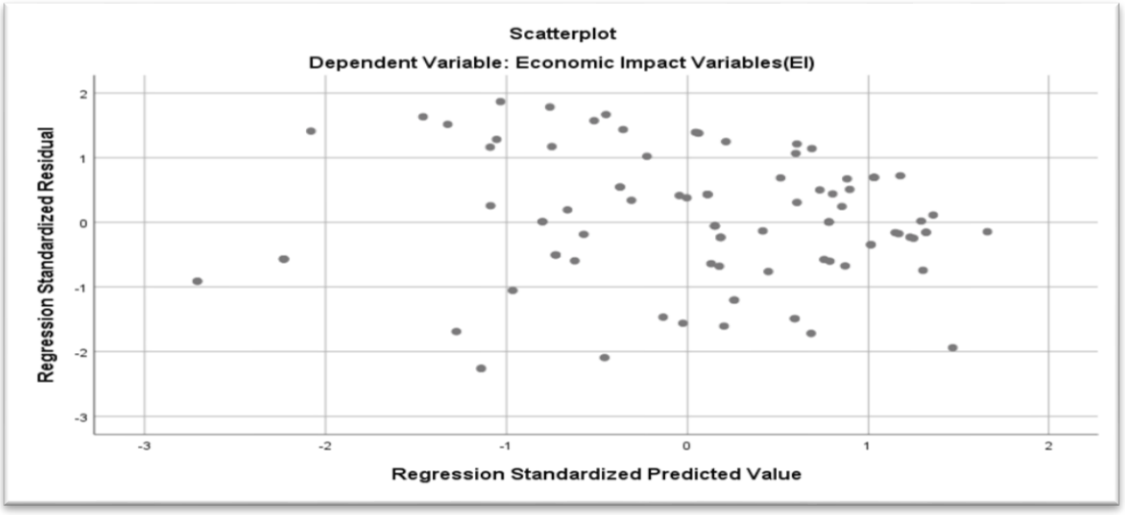
a. Predictors: (Constant), (CPP), (MD), (RL), (II), (TE), (FCF)

b. Dependent Variable :( EIF)

A well-constructed regression model should not exhibit a strong correlation among its independent variables, meaning there should be no multi-collinearity issues. Additionally, the variance inflation factor (VIF) should fall between 1 and 10, and the tolerance level should be above 0.2. The results in Table above indicated that there are no significant collinearity issues among the independent variables, as the tolerance value for all variables is above 0.1, and all VIF values are below 10 (VIF < 10). This means that the predictor variables are not highly correlated with each other, which is a good sign for the reliability of the regression coefficients.

#### 4.6.3.3 Homoscedasticity

The homoscedasticity assumption stated that the variance of the error terms remains consistent across all levels of the independent variables. This means that for each value of the predictor variable(s), the variance of the residuals should be constant. Essentially, the residuals at each predictor level should have the same variance (homoscedasticity). If the variances differ significantly, it indicates heteroscedasticity (Field, 2009). For basic analysis, we initially plot *ZRESID (Y-axis) against *ZPRED (X-axis) in SPSS, as this plot helps determine whether the assumptions of random errors and homoscedasticity are satisfied (Field, 2009). The resulting graph of *ZRESID and *ZPRED should show a random spread of dots, evenly distributed around zero (Ronelle M. Krieger, 2010).



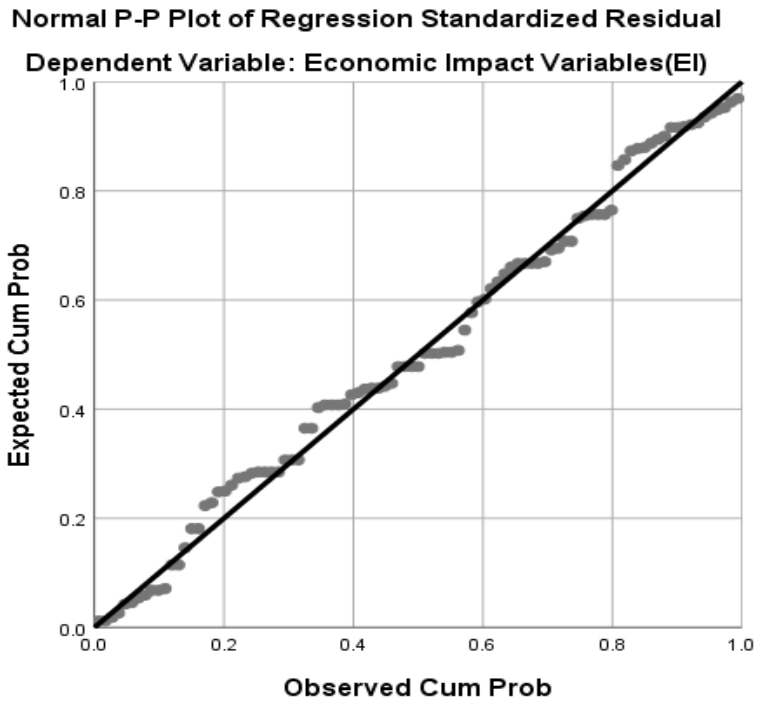

***Source: Survey result and own computation (2025)***

***Figure 4. 1 Scatterplot based on Residual***

As can be seen in the scattered plot on fig 4.1 above, the residuals at each level of explanatory variables look like they are evenly dispersed and that the graph do not assume any type of shaped. Therefore, it is safe to say that this study has no heteroscedasticity problem.

#### 4.6.3.4 Normally Distributed Error vs Normally Distributed Outcome Variables

The assumption of normally distributed errors suggests that the residuals in the model are random variables that follow a normal distribution with a mean of 0. Typically, a normal distribution forms a straight diagonal line, and the plotted residuals are compared to this line. If the distribution is normal, the residuals should closely align with the diagonal (Reid, 2007). Therefore, multiple linear regression analysis assumes that the errors between the observed and predicted values (i.e., the residuals) are normally distributed. This assumption can be verified by plotting the residuals on a histogram with a fitted normal curve or by examining a Q-Q plot.




***Source: Survey result and own computation (2025)***

***Figure 4. 2 P-P Plot of regression standardized residual***

Figure 4.2 shows that the residuals have a sound normal distribution because the plotted residuals were around the diagonal straight line instead of making any other shape or curve.

## 4.6.4 Results of the Regression Analysis

### 4.6.4.1 Summary of the Regression Analysis Model

The R-squared value in a multiple regression model is determined by the pairwise correlations among all variables, including the relationships between the independent variables and their connection with the dependent variable. The multiple correlation coefficient (R) reflects the strength of the relationship between Y (in this case, economic impact EI) and the six predictor variables included in the equation FCF, RLF, TEF, IIF, MDF and CPP which are factors influencing the adoption and implementation of economic value. Higher values of multiple R indicate a stronger correlation between the predicted and observed values of the outcome. A multiple R value of 1 signifies a model that perfectly predicts the observed data (Field, 2009).

Adjusted $R^2$ is a metric that indicates the reduction in predictive accuracy or shrinkage in a regression model. It shows the proportion of variance in the outcome that would be explained if the model were based on the entire population from which the sample was

drawn. Adjusted $R^2$ is typically lower than $R^2$, although the difference is minimal unless you're estimating too many coefficients with a small sample size and significant noise (Field, 2009).

**Model Summary table**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .702[a] | 0.575 | 0.541 | 0.565 |

a. Predictors: (Constant), (CPP), (MD), (RL), (II), (TE), (FC)
b. Dependent Variable :( EIF)

The result in the table above indicated that, the R value represents the strength and direction of the linear relationship between the independent variables (CPP), (MD), (RL),(II),(TE) and (FC) and the dependent variable (Economic Impact Variables (EI)). An R of 0.702 indicates a moderate to strong positive relationship between the predictors and the outcome.

In addition, The regression model demonstrates a strong relationship between the independent variables (CPP, MD, RL, II, and TE) and the dependent variable (EI), the adjusted $R^2$ (coefficient of determination) explains 54.1% of the factors influencing economic variables, as represented by the six independent variables analyzed. Thus, additional research should be carried out to explore the remaining 45.9% of factors that impact the economic variables. The standard error represents the average distance that the observed values fall from the regression line. A smaller standard error indicates that the model's predictions are closer to the actual values. In this case, the value of 0.565 suggests that the model's predictions are fairly close to the observed values. While there is some room for improvement in prediction accuracy, the model performs well enough for general use.

This study found that the regression model has a good fit with a strong relationship between the predictors and the dependent variable (EIF). The model is reasonably accurate with a low standard error, though some improvement can be made in terms of explaining the remaining variability and improving predictive accuracy.

### 4.6.4.2 ANOVA Table

The key component of the table is the F-ratio, which tests the null hypothesis that all the regression coefficients are equal to zero. Since $R^2$ does not assess statistical significance (it merely quantifies the variation in Y explained by the predictors Xs), the F-ratio is used to determine if $R^2$ could have arisen by random chance. In essence, the F-ratio in the ANOVA table evaluates the likelihood that the observed departure from a straight line occurred by chance.

**Table 4. 24 ANOVA Table**

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 34.641 | 6 | 5.7735 | 17.187 | .000b |
| | Residual | 36.682 | 90 | 0.403 | | |
| | Total | 71.322 | 96 | | | |

a. Predictors: (Constant), (CPP), (MD), (RL), (II), (TE), (FCF)
b. Dependent Variable :( EIF)

The survey data presented in Table 4.24 shows The F-statistic (17.187) and its associated p-value (0.000) confirm that the model is statistically significant, and the predictors collectively have a meaningful impact on the outcome. However, the residual sum of squares (36.682) indicates that there is still unexplained variation in EI that could potentially be accounted for by other factors not included in the model. As a result, we can conclude that our regression model provides significantly better predictive factors for economic impact.

### 4.6.4.3 Coefficients of Regression Analysis

In order to know which of the predictors' i.e. (CPP), (MD), (RL), (II), (TE), (FC) has contributed significantly to our understanding of Y (Economic Impact Factor (EIF), the following table shows Coefficients when we explore each predictor's beta (i.e., standardized regression coefficient) and its level of significance.

**Table 4. 25 Coefficient Table for regression analysis**

**Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 1.184 | 0.36 | | 3.286 | 0.001 |
| Financial constraints (FC) | 0.201 | 0.095 | 0.226 | 2.118 | 0.041 |

| | | | | | |
|---|---|---|---|---|---|
| Regulatory and Legal Issues (RL) | 0.201 | 0.095 | 0.246 | 2.121 | 0.037 |
| Technical Expertise (TE) | 0.289 | 0.113 | 0.319 | 2.549 | 0.019 |
| Infrastructure Issues (II) | 0.223 | 0.091 | 0.292 | 2.44 | 0.025 |
| Market Dynamics (MD) | 0.249 | 0.106 | 0.317 | 2.347 | 0.021 |
| Contractor Poor Performance Variables(CPP) | 0.366 | 0.118 | 0.323 | 3.111 | 0.002 |

***Source: Survey result and own computation*** *(2025)*

a. Predictors: (Constant), (CPP), (MD), (RL), (II), (TE), (FCF)
b. Dependent Variable :( EIF)

As stated previously (chapter 3), the researcher performed a multiple regression analysis to examine the relationship between the independent variables and the dependent variable. This analysis was carried out to determine the extent to which the independent variables account for variations in the dependent variable. The model used to illustrate this influence is presented below:

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_{6+} \varepsilon$ becomes:

As per the SPSS outcome, the equation $Y= \beta_0+ \beta_1 \cdot FC) + \beta_2 \cdot RL) + \beta_3 \cdot TE) + \beta_4 \cdot II) + \beta_5 \cdot MD) + \beta_6 \cdot CPP) + \varepsilon$ becomes:

$Y=1.184 + 0.201 \cdot X1 + 0.201 \cdot X2 + 0.289 \cdot X3 + 0.223 \cdot X4 + 0.249 \cdot X5 + 0.366 \cdot X6 + 0.565$

The result shows that, the t-statistic (3.286 and p-value (0.001) indicated that the variables are highly statistically significant. The p-value is less than 0.05, which means all are very important factor impacting the economic.

The Beta values in the table above show the magnitude of relationship between variables, higher values being an indication of strong relationship, allowing for comparison of the relative importance of each predictor. In this study, contractor poor performance variables (CPP) (Beta = 0.323) has the highest standardized coefficient, meaning it has the largest effect on the dependent variable in standardized terms. Followed by market dynamics (MD) having (Beta = 0.317)**.** Whereas, infrastructure issues (II) (Beta = 0.292) and technical expertise (TE) (Beta = 0.272)**,** are found to be the third most significant factors show with the moderate effects on the economic. In addition, regulatory and legal issues (RL) having Beta = 0.246 for every 1-unit increase in regulatory and legal issues (RL) having Beta = 0.246**,** influence the economic predicted to increase by 0.201 units. Similarly the financial constraints (FC) (Beta = 0.16) has the smallest standardized coefficient, confirming that its influence on the dependent variable is the weakest in both raw and standardized terms. The final factor

impacting the economic was financial constraints (FC) (Beta = 0.16). So compared to a one percent increase in the financial constraint factors, we would expect the adoption of economic will increase by 0.226 having constant the other variables.

## 4.7 Findings of the Interview Data

This discussion covers the related problems and the suggested improvement of the challenge factors as determined from analysis of interview responses. Semi-structured interview questions (interview guide) were used to get opinion of the interviewees and attempt was made to map with subthemes of the research construct through a series of follow- up questions. Themes of analysis and discussion for challenges were the perceived sources of challenges. Characteristics of the relating poor contractor performance and its resulting economic impact were also discussed along with challenges. Problems raised by the interviewees reaffirm results of the survey results. Since interviews were held after arriving at preliminary findings from the questionnaire, an effort was made to link the interview discussion with findings of the questionnaire with an intention to validate and supplementing the questionnaire findings. It was also discussed the far reaching of the poor performance of contractors impact on the economy. Improvement mechanisms part of the interviews are covered in improvement mechanism chapter.

### 4.7.1. Identified Challenge's from Interview

The interview responses provided gave a detailed and multifaceted overview of the challenges local contractors in Ethiopia face in securing and completing construction projects. Here's a thorough analysis and compiled in a summarized way reflected suggestions of the interview that touches on the economic impact of these challenges:

The most contractor interviewee reflected that the current challenges are associated with the limited access to finance that local contractors frequently struggle to secure adequate financing to fund their projects. Eventhogh, *many banks existed in the country, there is difficulties in obtaining loans, high-interest rates, and collateral requirements*. They indicated this problem has a cascading effect on project timelines and costs. This outcome lined with the response discussed in the above chapter.

The interviewees added that they face bureaucratic delays and corruption-related issues in the construction permitting processes. *For example, when they goes to renew their license to the permit office, after a long period taken to fulfil the criteria to end the*

*process, the staff with in that office makes to failed at unexpected criteria even it is not any connection with the process, after frequent turn and study those staff finally wants something to provide them to end the step without any further hassles that this linkage has the matter of corruption related issues.*

In addition, the interviewee reflects that inefficient tendering processes may limit the ability of local contractors to secure government contracts, reducing their market share. *Corruption drives up the cost of projects by introducing unnecessary intermediaries and inflated costs in the procurement process.*

One client interviewee stated that the price instability of construction materials directly contributes to cost overruns. *Contractors may face the dilemma of agreeing to price changes with clients or halting progress until they can secure the necessary materials*.

Four contractor interviewee reflects that *security concerns, especially in conflict-prone regions, affect contractors' ability to complete projects as planned. Regional conflicts or instability create disruptions in project activities, including theft of materials, damage to equipment, and safety concerns for workers.* The risk of delays due to security concerns adds uncertainty to the construction industry, making it less attractive for both local and foreign investors. One consultant interviewee remarked that the inability of local contractors to compete with international firms for high-profile contracts leads to a loss of market share. *Smaller contractors may be forced to lower their prices to remain competitive, affecting their profit margins*. Three contractors interviewee's, particularly those working with government agencies reflected that, *as they face delays in receiving payments for completed work*. Payment delays create a significant cash flow burden for contractors, especially those without sufficient reserves to continue operations.

The interviewee highlighted as it is *difficult to compute with International Contractors frequently noted for adhering to global standards, typically bring higher quality outputs. They have access to advanced technology, equipment, and training*. Foreign construction consultants have mainly handled design and supervision works of many bigger infrastructural and building projects such that of the total asphalt roads built for the period 1997/98 -2005/06, the average share for domestic and foreign contractors were 10.7 percent and 81.2 percent, respectively. This, in turn, has foreign exchange implications on the country(Amoroso & Thompson, 2006); & (Dereje & Mengesha, 2023). Whereas local contractors are a common challenge, such as inadequate supply

chains, delays in material procurement, and reliance on outdated techniques contribute to lower efficiency. As (H/Gebriel, 2004), remarked lack financial management skills that hinder their capacity to complete projects on time and within the estimated budget.

## 4.8. Gross Economic Impacts of the challenges and Poor Performance of Local Contractors

As discussed earlier in the above section 4.5, the factor analysis identified one dominant component explaining 65.3% of the total variance and were identified the core factors. Here are discussed further the gross economic impact in relationship with the interview and the challenges and poor performance of these factors. The study implicated that the percentage increase in cost of project completion estimated through the stakeholders were analysed and recognize the widespread impact of contractor challenges on the sector's cost structure. This was confirmed through the correlation analysis in the Table 4.22 above that the challenges and poor performance of local contractors are correlated significantly. As (Al-zahrani, 2013) cited (Doloi, 2009) conducted in his study, In the Singaporean construction industry used multiple regression analysis to study 43 influencing technical attributes in contractor selection and their links to project success objectives. Accordingly, the researcher confirmed the cause and effect of these factors by conducting regression analysis that if these factors of a broad economic challenge underlies much of the observed issues affecting local contractors. This was aligned also with the interview findings to triangulate the result. Based on these analysis the following basic factors were discussed.

### 4.8.1. Slow Infrastructure development

A major theme throughout the responses was the impact of delayed projects on the local community and the economy. If the delay is not identified and the corrective project management decision is not taken in time a project may incur extra cost and extension of project time, which gives rise to dissatisfaction to all the parties involved and nowadays it's becoming a major obstruction for their development for developing countries like Ethiopia(Hareru et al., 2016). Delays not only increase the direct costs of construction but also affect businesses and other industries that depend on the timely completion of infrastructure projects. When projects are delayed or poorly executed, it leads to further economic losses as resources are diverted to cover unanticipated expenses, and economic opportunities are missed. Kassie(2019 have showed in his review that the findings of study on cost and time overrun in Malaysian construction industry revealed that 92% of

construction projects were overrun and only 8% of project could achieve completion within contract duration. In terms of cost performance only 11% of respondents mentioned that normally their projects are finished within budgeted cost while 89% of respondents agreed that their projects were facing the problem of time and cost overrun in the range of 5-10% of contract (Rahman et al, 2012).

### 4.8.2. Reduced competitiveness of the economy

As mentioned by some interviewees, poor performance can increase government spending. This occurs due to cost overruns, the need for additional resources to fix mistakes, and the extension of project timelines. Public funds that could have been allocated to other critical areas are instead consumed by inefficient construction projects. Mitikie et al.(2017) underlined problems of the construction sector in Ethiopia is that the sector is not viewed and planned in an integrated manner, but rather, operates with fragmented, unrelated and often conflicting components. The result is wastage, inefficiency, and inability to plan for total development. As (Amoroso & Thompson, 2006) quoted (MOWUD,2007), the shortage of such high level expertise domestically has been costing the country huge scarce foreign exchange**.** The author explained, during the period 1997/98 -2005/06, the total number of supervisors involved in the road sub sector service has been 138 of which 100 were domestic supervisors while the remaining balance were foreigners. Although the number of domestic supervisors has accounted for about 72.5 percent of the total number of supervisors in the road construction, the financial payment that was effected to domestic supervisors was only 27.5 percent. So, the lion's share of the payment for road construction supervision work went to foreign supervisors.

### 4.8.3. Loss of job opportunities and investment

Poor performance often results in fewer job opportunities. This is evident from one government official's respondent that mention layoffs, reduced hiring, and higher unemployment rates. This can exacerbate poverty in local communities and diminish the purchasing power of citizens, further straining the local economy. The number of construction profession registered up to November 2006 are 13, 577, indicated that this number is very low given the population of over 77 million and the high demand for such professionals for the development of the industry and transfer of technology (Amoroso & Thompson, 2006).

### 4.8.4. Reduced economic growth and dependency on foreign aid

The lowest growth was registered in 1999/00 due to low construction investment by government which in turn was due to the Ethio-Eritrean war (Amoroso & Thompson, 2006) quoted (MOWUD,2007) report on the Ethiopian economy.

The study found that poor contractor performance can deter both domestic and foreign investment. As (Amoroso & Thompson, 2006) (MOWUD,2007) remarked the annual construction capacity of domestic contractors who renewed their license in 2005/06 is Birr 5,930 million, which is about 27.1 percent of the construction Gross Value of Production (GVP) for the same year. This implies that the domestic construction industry was low enough to undertake the annual construction projects demanded in the country thereby necessitating the involvement of foreign contractors.

Investors are reluctant to commit to regions where infrastructure projects are often delayed or executed poorly. This results in reduced economic activity, stagnating business growth, and missed opportunities for regional development. In addition, inefficiency in the construction sector can have a ripple effect, slowing down other related sectors such as real estate, manufacturing, and transportation.

### 4.8.5. Influence of culture, perception, and attitude of stakeholders

Culture has become an important area of study in business organizations. It has been found that every organization has a culture which is determined by its history, size, corporate goals and objectives, technology of production, market, and operating environment (Handy 1985, Rwelamila et al 2000, Hofstede 1980) cited by (Ofori, 2009). Some respondents pointed out that poorly managed construction projects have social and environmental implications. These include prolonged disruption of local communities, health risks due to poorly constructed infrastructure, and the environmental impact of unfinished or defective projects.

Finally, this result underscores the importance of addressing local contractor performance issues to foster economic growth and stability in Ethiopia's construction sector, as the majority of stakeholders acknowledge a significant economic impact from poor contractor performance. This study summarizes the key economic impact indicators stemming from the performance and challenges of the construction industry as in the table 4.26 below.

**Table 4. 26 Factor analysis score variables of economic impact indicators**

| No. | Broader economic consequences of poor performance Indicator variables | Mean Rank | Factor Score loaded | Aggregate Rank |
|---|---|---|---|---|
| 1 | Slow Infrastructure development | 4.07 | 0.770 | 1 |
| 2 | Reduced competitiveness of the economy and investment | 3.96 | 0.891 | 2 |
| 3 | Unreliable supply chain | 3.95 | | 3 |
| 4 | Loss of Job Opportunities and investment in the industry | 3.89 | 0.829 | 4 |
| 5 | Influence of culture, perception, and attitude of stakeholders | 3.81 | 0.752 | 5 |
| 6 | Reduced economic growth and dependency on foreign aid | 3.79 | 0.817 | 6 |

***Source: Survey result and own computation (2025)***

## 4.9. Potential Benefits of Improving Contractor Performance

The majority of respondents (especially local contractors) and consultants seem to believe that local contractor challenges have a moderate to high impact on GDP growth in the construction sector. Al-zahrani(2013), In the UK Rethinking Construction using Latham and Egan Report (1994) and found that the improvement of performance in the industry was the main objective of such changes. In the Singaporean, (Ofori, 2009), a steering committee representing the main segments of the industry was appointed, with terms of reference. Based on these suggestions and analysis the improved performance of the local contractors may the following potential economic benefits.

### 4.9.1. Economic Growth and Job Creation

A key benefit of improving contractor performance is the potential for economic growth. As Ofori (1993) suggests, the construction industry must help the national economies to recover, and also contribute to the easing of the social problems. There is growing awareness among developing countries about the significance of infrastructure supply and capacity building in construction for socio-economic development, in general, and for the effective implementation of poverty reduction initiatives, in particular(Zawdie & Langford, 2020).

Many respondents emphasized that efficient, well-executed projects would lead to job creation not just in construction but also in related sectors such as materials supply, logistics, and services. This job creation has a positive multiplier effect on the local economy. Improved performance can also attract foreign investment, as investors seek reliable and efficient construction partners. This can lead to more projects, better business prospects, and increased economic activity. For example, (Ofori, 2000) notes

that China has several international contractors but foreign firms are active on its sophisticated-project market. India has large numbers of skilled personnel, and foreign enterprises have set up skills-intensive operations such as design and information-technology offices. However, few Indian construction firms are successful overseas.

### 4.9.2. Increased Infrastructure Development

One of the major arguments for improving local contractor performance is its potential to enhance infrastructure development. When projects are completed on time and with high quality, essential infrastructure such as roads, hospitals, schools, and energy facilities can drive broader economic development. Improved infrastructure enhances connectivity, access to services, and trade, all of which are vital for economic progress.

### 4.9.3. Cost Efficiency and Better Resource Allocation

Al-zahrani(2013), study indicated that although the construction industry is very significant to the UK economy, it has long been criticised for a high incidence of project time and cost overruns and being slow to adopt new management techniques (Poon et al. 1999, Egan 1998). A more efficient local contracting sector would lead to more timely project completions, reducing overall project costs. This would allow governments and private entities to allocate resources more effectively, ensuring that more projects are undertaken and completed successfully within budget. Therefore, cost performance is considered one of the most critical issues during the execution of construction projects (Chan, et al. 2004, Doloi 2011) cited by (Kassie, 2019).

Efficient contractors also help maximize the impact of public investments, improving the overall quality of public services without imposing additional financial burdens on taxpayers.

### 4.9.4. Reduced Dependency on Foreign Contractors

By improving local contractor performance, Ethiopia could reduce its reliance on foreign firms for infrastructure projects. This would allow the country to retain more capital within the local economy, support the development of local skills, and encourage sustainable growth in the construction sector. As (Ofori, 2009) explained by leveraging the advantages of hiring local contractors in Ethiopia, organizations can not only support the local economy and workforce but also benefit from their cultural understanding, cost-effectiveness, long-term relationships, and regulatory compliance, ultimately leading to successful and sustainable project outcomes. Local contractors are likely more familiar

with local laws, regulations, and industry standards, ensuring better compliance and adherence to legal requirements throughout the project if government should be monitored and adjusted as the context, changes not create much dependency(Ofori, 1999).

To facilitating, promotional and supporting efforts of the government, the enterprises also have to make their share of effort in enhancing capacity to cope with the changing operating environment(Abraham, 2003) cited by (Mengistu et al., 2023).

### 4.9.5. Enhanced Competitiveness

As contractors become more competitive due to better performance, they will be able to secure more contracts both locally and internationally. This would not only create more job opportunities but also boost Ethiopia's standing in the global construction market. Although extensive research has been carried out on international construction, scant study in this domain exists which has paid attention to developing economies (Utama et al., 2018). Focus of this study in Indonesian contractors' is motivations to enter foreign marketplaces.

### 4.9.5. Enhanced Quality of Infrastructure

Improved-quality of infrastructure, such as roads, bridges, and buildings, can increase the lifespan of investments. As noted by several respondents, infrastructure that meet quality standards does not requires more maintenance, minimizes long-term costs for governments and private investors. Improved infrastructure quality can lead to higher property values, increased competitiveness in the market, as well as increased satisfaction of the clients. This increase trust in local contractors can lead to enhance project awards, competition, and improved interest from both public and private sector clients.

## 4.10. Summary of the Section

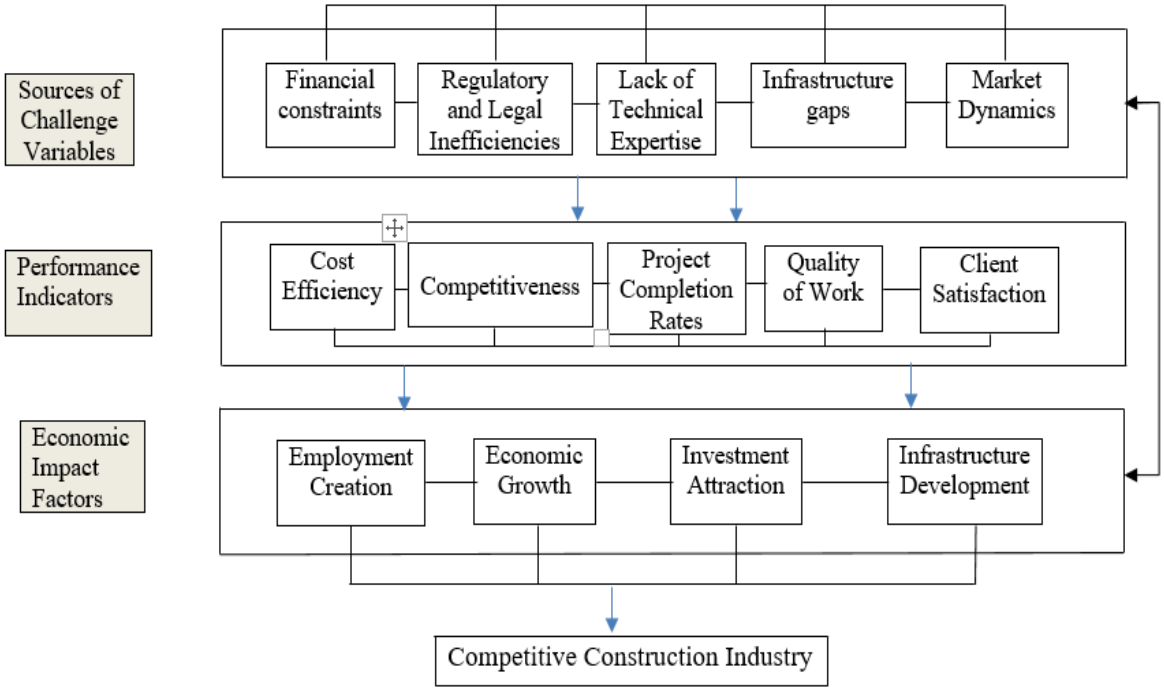
Eight components from the five sources were identified as challenges through factor analysis (with different factor scores). Two components are from financial constraints: access to finance and credit management (3.70), financial management and payment structures (3.54). Two components are from regulatory and legal issue related challenges: regulatory frameworks and administrative inefficiencies (3.53) and Socio-Political Influences and Corruption within the system (2.71). Two components are from technical expertise variables: management capabilities and organizational issues (3.67)

and human resource and technical knowledge issues (3.35), one component is from Infrastructure Issues: infrastructure deficiencies and the dominance of overseas contractors (3.53) and one component is from market dynamics related challenges: equipment, material availability, and technological efficiency (3.78) and interviews also support these findings.

Similarly, this study found that the key performance indicator variables of local contractors poor performance are determined that the factor analysis score two components, one is Operational Inefficiencies and Stakeholder Issues (4.15) which score three main variables; (i) Poor relationship among key stakeholders (.864), (ii) Inconsistency of practice in the industry(.586) and (ii) Failure to meet quality standards (3.94), and the second is financial performance failure (3.86) which score three main variables; (1) Cost overruns (.812), Project delays and failures to meet schedules (.607) and reduced profitability(.941).

Furthermore, the study revealed that one component of broader economic consequences of poor performance Indicator variables which scores six main variables; (i) Slow Infrastructure development(.77), (ii) Reduced competitiveness of the economy and investment (.889), (iii) Unreliable supply chain (.703 ), (iv) Loss of job opportunities and investment in the industry (.829), (v) Influence of culture, perception, and attitude of stakeholders (.752) and (vi) reduced economic growth and dependency on foreign aid (.817).

Finally, this study indicates that, the regression model demonstrates a strong relationship between the independent variables (CPP, MD, RL, II, TE and FC) and the dependent variable (EI), the adjusted $R^2$ (coefficient of determination) explains 54.1% of the factors influencing economic variables, as represented by the six independent variables analyzed. These are the regression model reveals with Contractor Poor Performance Variables (CPP=0.323) and Technical Expertise (TE=0.319) are the most significant predictors of the dependent variable, both having large standardized coefficients. In addition, factors such as Market Dynamics (MD=0.317), Regulatory and Legal Issues (RL=0.249), Infrastructure Issues (II=0.292), and Financial Constraints (FC=0.226) also play significant roles respectively in predicting the dependent variable.




*Source: Survey result and own computation (2025)*

***Figure 4. 3 Relationship among the Factors***

## 4.11. Improving Mechanism for Local Contractor Performance

This section covers improvement mechanisms of contractor's poor performance indicator factors previously identified namely: cost effectiveness, enhancing competitiveness and project completion rate, improving quality and client's satisfaction through monitoring and tracking the challenging factors.

As (Mengistu, 2019) remarked in his study that improving construction industry performance is a long-term activity (Wolstenholme 2009, Kumaraswamy et al. 2010, Ofori et al. 2011). The author added that Improvement requirements of the industry varies along different periods quoted (Ofori 1980, Fox 2003). As it is difficult to measure everything, setting the core performance indicator and improve them over time to suit the changing context is important.

The economic impact of a poorly performing construction industry is far-reaching and directly affects key economic indicators include: growth of sector, competitiveness, supply chain, employment, culture, GDP and investment. As (Ofori, 2009) cited (Hoffman, 2002), stated that the construction industry is central to how we shape our future, and to the sustainability of this future. This was reaffirmed in the previous chapter with the stakeholder most respondent that, the increase in project costs due to poor

contractor performance is perceived as significant, with the 51%+ and 21-30% categories accounting for the largest share of responses. This was confirmed with one Interviewee respondent from the regulatory body identified that financial and technical constraints as the primary barriers to improving local contractors' performance. The respondent pointed out that compliance with international standards and improved access to resources and training could help local contractors improve. International contractors generally perform better in terms of both quality and efficiency, but local contractors, if provided with adequate resources, support, and government attention, could improve significantly. Therefore, sustainable construction can happen only if all the necessary elements both technological and contextual enablers, as well as stakeholders are developed and work together at local, national, regional and international levels. A study conducted by (Shen & Tam, 2002) in Hong-Kong, concluded that construction contractors considered sustainable construction practices as inevitably leading to extra costs and resources and thus unlikely to attract their interest(Baloi, 2003). Financial and regulatory issues encompass a wide range of sources of poor performance, as reviewed and confirmed in the analysis and interview section, these issues are discussed separately. While all other identified challenges are addressed under the poor performance factors, reflecting their interrelationships as observed in the analysis part. A detailed analysis by theme is organized below.

### 4.11.1. Reduce Cost Inefficiency:

Addressing issues related to cost overruns, reduced profitability, and project delays requires better financial management and planning. As a result of better time and cost control over the project, partnering lowers the risk of cost overruns and delays in construction projects (Chan et al. 2003) these cited by (Al-zahrani, 2013).The researcher revealed that increasing the use of digital technologies, such as remote tools for project management and digital marketing, was highlighted as an effective way to reduce operational costs and improve project execution. As (Linh, 2023) stated apply construction methods from the initial steps of project implementation to save costs.

### 4.11.2. Reduce Project Delays and failures to meet schedules:

The study revealed that lack of technology slows down project planning, execution, and communication, leading to increased costs, delays, and poor quality. Construction technology development increase productivity, better collaboration, and completing projects on time and under specified budget of construction projects(Reta, 2020).

As the response in the analysis found that a recurring issue is the limited access to modern construction technology. Without the ability to adopt innovations like Building Information Modeling (BIM), drones, and construction management software, local contractors fall behind in terms of efficiency, accuracy, and safety. Many respondent suggested that collaborating with technology providers and international construction firms can help local contractors adopt new tools and improve their technical capabilities. According to Tan et al (2011) reviewed by (Linh, 2023), applying technology and innovation using tools such as Building Information Modeling (BIM), E-learning, and Developing Benchmarking in construction is one of the criteria for sustainable construction for contractors.

The respondent added that, organizing workshops and seminars to teach contractors and their workers how to use modern technologies would increase their competitiveness. Moreover, the local contractors can improve the quality of their work and adopt more efficient methods of construction in two ways. (1) Using technology integration, that there is a strong emphasis on encouraging the use of project management software, construction tech platforms, and digital communication tools to improve efficiency and transparency. (2) Using international best practices, learning from and adapting proven international best practices to local conditions is a recurring suggestion. The researcher reflected two ways that emphasizes quality assurance and standards. (1) Through certification programs, to ensure that contractors meet certain quality standards was suggested as a way to improve the reputation and competitiveness of local contractors. (2) Through inspection and transparency, clear inspection guidelines and quality checklists could ensure that contractors meet required standards and maintain high performance levels. (Kassie, 2019) cited Goh (2005) in his study remarked that information technology management leads to performance improvement in the construction industries. For instance, in Singapore 2003, general administration, design, project management, site management were enhanced by using of IT.

### 4.11.3. Increase Competitiveness to Ensure Consistent Practice:

The study identifies a factor that mostly contributes to the infrastructure challenges, faced by local contractors in Ethiopia. To overcome this challenge factor one interviewee suggested that the government in his policy implementation should include Infrastructure development prioritized in national policy to reduce the dependency on foreign contractors, enabling local contractors to take on more projects by increasing local

contractor participation in major projects. As (Bharti, 2023) showed in his study Chaina's government has created a number of projects to their local contractors' to develop. To do that the government should have follow two ways that the local contractors are access easily. (1) Through fair competition, that there is a call for promoting fair competition between local contractors and larger, foreign firms. By leveling the playing field, local contractors can have better access to public and private sector projects. (2) Access to information, creating centralized platforms where contractors can access information on available projects, upcoming bids, industry trends, and regulations. This would also lead to job creation and better access to opportunities for Ethiopian workers and contractors. As Iskandar Malaysia attracts total investment of RM32.15bil (2014, March 22) The Star Online reported that with a large amount of investment, it provides job opportunities for local contractors (Salim et al., 2018).

The respondent added that government support for local contractors, including capacity-building initiatives, would help them compete with foreign firms. These supports might include training programs, financial incentives, and creating a more favorable regulatory environment for local construction businesses. The respondent implicated that the dominance of overseas contractors in infrastructure projects suggests the need to increase local contractor involvement in large-scale developments. Moreover, contracting policies can be designed to ensure that local firms have greater opportunities to bid on and execute major infrastructure projects. An affirmative policy in South Africa to support the changed environment and socio-economic objectives of government was developed, which in turn led to a development of targeted procurement policy (Nkado, 2000:3).

Skilled labor is essential not just for meeting project requirements, but for staying competitive with international contractors who often bring in specialized workers.

The performance of local contractors is often dominated by government projects, and government policies play a significant role in shaping these contractors' success or failure. One contractor respondent pointed to Ethiopia's local preference policies for public works, which give priority to local contractors. The other one is Preference Programs such as those employed in the U.S. by the Small Business Administration (SBA) or Ethiopia's local preference in public works help local contractors compete for large contracts that would otherwise be inaccessible.

### 4.11.4. Enhance Collaboration culture among key stakeholders in the industry:

The study underscores the need for better communication and collaboration among all stakeholders in the industry. This confirmed (Martyn and Hills, 2008), Clear, accurate and timely communication is critical to the success of any project, as miscommunication can result in increased project risk. Contractors must work closely with clients, consultants, and government bodies to align goals, improve project outcomes, and avoid misunderstandings that lead to delays and rework. The construction companies nowadays are very dynamic, forcing the contractors to use right strategic decisions in doing the business Izik , David & Birgonul (2010).

Furthermore, their existence is depending on the contractor's capability to grab opportunities (Lansley, 2002). Local contractors' companies need to create mechanisms to increase their involvement in FDI projects. Contractors must create domestic linkages. This is because when companies create linkages, knowledge from these firms can be transmitted to the suppliers and distributors, and ultimately to domestic firms using the same suppliers and distributors (Spencer, 2008). Strengthening government-contractor communication and fostering better collaboration and partnerships will help improve industry performance and address existing gaps.

Similarly, this was confirmed with three of contractors and one consultant's interviewee that mentioned the need to collaborate more effectively with suppliers, clients, and other contractors in two ways. (1) Networking and partnerships, encouraging partnerships and joint ventures among contractors to pool resources and tackle larger projects together and (2) Stakeholder engagement, including financial institutions, consultants, and government agencies, in finding and implementing effective solutions. Strategic partnerships can share resources, reduce costs, and enhance performance in the face of economic challenges. The analysis reflected that the government has an essential role in creating an environment conducive to the growth of local contractors.

Faster communication and timely responses from consultants would help mitigate project delays. This was explained by (Bedada, 2023) that education and mandatory training programs can conducted for stakeholders about the content of the market inflation and rising cost of building materials to control. Similarly,(Beshah et al., 2024) in his study remarked the construction industry frequently evaluates success based on quality, cost,

time, stakeholder satisfaction, health, and safety, while less frequently considering environmental impact, learning, and development. These evaluation criteria should be set before starting the project.

The most significant factors relating to the types of measurement systems in use are satisfaction of the client, the profitability of the project, viability and feasibility of the project, satisfaction of the project's users, and quality of the project was the best performance measurement adopted(Zamim, 2021).

### 4.11.5. Eliminate Failure to meet quality standards:

The study pointed out that failure to meet quality standards are the result of poor project management capabilities. To address this problem strengthening the management and technical skills of local contractors through training programs and capacity building initiatives will help improve operational efficiency, reduce reworks, and ensure quality standards. (Asiedu, 2014) in his study remarked that to ensure construction project performance satisfaction is to manage projects with the ultimate aim of meeting the required standards predetermined and expected by all stakeholders.

The factor analysis identifies two critical areas where intervention is needed to improve technical expertise in the construction sector: One is improving management capabilities and organizational efficiency implicated that contractors should invest in leadership training, adopt modern project management tools, and improve communication within teams and between government and contractors. Streamlining internal processes and promoting collaboration can significantly enhance project execution and reduce delays. As most of the works of contractors is managed as a project, improving the contractors‟ project management capability can significantly contribute to the overall improvement of contractors‟ capability to deliver successful projects(Kurniawati, 2017).

The other is addressing human resource and technical knowledge gaps which pointed out the need for skilled labor retention and improving technical knowledge, should invest in training programs that focus on enhancing technical skills, particularly for complex tasks, and implement strategies to reduce high labor turnover. (Kassie, 2019) in his research demonstrated that it is not a very big step to provide workers with uniform, proper ablution facilities and rest room areas. Ethical terms and conditions are publicly enforced. According to (Anthony, 2007) cited by (Kassie, 2019) More works also needs to be done in the area of upgrading existing managers, in terms of improving their

management skills, teaching them new ones, and persuading them to adapt to technological changes. In Ethiopia, for example, the (ERA, 200) has a Training and Testing Branch which gives courses to upgrade workers and supervisors. A rather interesting program somewhat along these lines in Kenya is that of the National Construction Company, established by the government in 1967 to assist African contractors by obtaining work for them, giving them advice and training, and providing them with finance see (Kifle, 2013) review.

Furthermore, the interviewee suggested that the creation of mentorship programs where more experienced contractors guide new or struggling ones. This could enhance local contractors' ability to solve problems, build business strategies, and manage projects more effectively.

### 4.11.6. Enhance Profitability:

Ensuring timely access to quality materials and machinery can significantly enhance operational efficiency and reduce project delays. The fluctuations in material prices represent a significant risk for contractors, affecting both short-term profitability and long-term project planning. To mitigate this risk, contractors can explore strategic procurement practices such as long-term contracts with suppliers, hedging against price volatility, or forming alliances with manufacturers to ensure stable pricing over the course of projects. The high loadings factor score on the availability of materials and plant machinery seen in the previous chapter emphasize the need for reliable access to these resources. Production and administration of construction materials will be strengthened and existing and new local low cost construction materials developed and improved through research and technological transfer(FDRE, 2010).There is a need for more investment in local infrastructure to ensure that local contractors have access to reliable equipment and materials. This would help mitigate the challenges of relying on external suppliers and reduce the impact of price fluctuations.

Efforts to increase labor and equipment productivity, standardize practices, and focus on quality control are crucial for improving performance by reducing rework. Similarly, adopting best practices in project management, increasing workforce training, and investing in efficient machinery can help contractors execute projects faster and at lower costs. According to (Hung , 2023) cited by (Linh, 2023) contractors have been using machinery and equipment to meet higher labor productivity, and have plans for Effective

implementation, reducing waste during use. Enhancing equipment productivity through investment in modern machinery and technology can achieve in two ways. One is through government policy that provides improving access to materials and equipment, local contractors may benefit from improved supply chains, partnerships with equipment suppliers, and greater investment in modern construction equipment. The other is the inefficiency of equipment and outdated technology highlighted in this analysis suggests that there is a need for greater investment in modernizing equipment and adopting innovative technologies. Benjamin (1991) stated that equipment has long been considered as one of the key factors for improving contractor's capability in improving their work efficiently and effectively see (Kifle, 2013) review.

### 4.11.7. Improving Access to Finance

Policymakers should work to improve the availability of credit facilities and finance options for local contractors. Salim et al., (2018) reviewed (Mahalingam & Levitt, 2005) remarked that many case studies show that in order to modernize, the local construction industries and clients in global construction markets, particularly in developing countries require project financing. To improve the level of domestic savings and foreign exchange savings through promoting import substitution of imported materials and construction services with domestic products and services(FDRE, 2010). Therefore, financial institutions could work closely with contractors to develop specialized loan products that cater to the specific needs of the construction sector.

The result found from the factor analysis ensuring that local contractors have reliable access to foreign currency for purchasing materials and equipment would mitigate one of the most critical financial constraints. This was confirmed with the several contactor respondents emphasize that subsidized loans, grants, collaborating with private banks and international development agencies and tax incentives play a significant role in supporting local contractors financially. These initiatives allow contractors to access capital for technology upgrades, equipment procurement, and skill development. Two contractor interviewee pointed out that the importance of utilizing locally sourced materials and labor, reduces costs associated with foreign imports and helps minimize the effects of currency fluctuations and tariffs. This may supported by the government policy in a nationwide. In addition to that one respondent pointed out as an example that Ethiopia's import duty exemptions for certain materials used in critical infrastructure projects such as the Grand Ethiopian Renaissance Dam (GERD) help reduce operational

costs for local contractors working on large projects, as this is encouraged but is not enough to address the short comes comparing to the number of contractors registered in the nation. While government support is seen as crucial, its impact is often inconsistent. The study revealed that the contractor interviewee frequently mentioned the challenges posed by foreign exchange fluctuations, which affect the cost of imported materials. Some suggested that increasing local production and reducing reliance on foreign materials could help mitigate these issues in the long term.

Providing training and support in finance and credit management could improve contractors' ability to manage resources and reduce financial difficulties. Providing training and capacity-building programs on financial management, budgeting, reducing wastage and cash flow management will enable local contractors to manage their finances more effectively, reducing the likelihood of financial mismanagement, periods of economic uncertainty and project delays. One regulatory and government official's respondent mentioned that streamlining operations, automating certain processes, and adopting lean management principles to improve efficiency.

To minimize cash flow problems for contractors, the construction industry needs clearer and more flexible policies regarding payment retention and price adjustments. This was also remarked by (Gezahegne, 2011), in his study showed that price adjustment and claim procedures are not practiced as per the procedures expressly stated in provisions of conditions of contract applicable in the domestic construction industry. Simplifying retention clauses and providing clear guidelines for price adjustment mechanisms can improve contractors' cash flow and reduce the financial stress caused by fluctuating material and labor costs.

Regulatory reforms aimed at reducing the financial burden of securing guarantee bonds would help contractor's access larger and more lucrative projects, improving their overall performance and financial stability. This was confirmed with eight of the contractor interviewee that projects client may applied either be used the performance bond rather cutout of these retention many and release to contractors.

### 4.11.8. Regulatory Frameworks and Administrative Inefficiencies

The first component under the regulatory and legal issues pointed to regulatory and administrative inefficiencies that hinder contractor performance. Improvement of the industry needs strengthening the existing institutions for effective coordination, aligning

the applicable regulatory tools with industry specific development strategies and establishing some implementation systems(Mengistu, 2019). The problems arising from this variable does not arise from a lack of adequate legal provisions, but rather from a lack of the ability to enforce their compliance(Anny et al., 2015).

Effective policy interventions in these areas will not only enhance contractor performance but also contribute positively to the broader Ethiopian economy, providing a foundation for long-term development in the construction industry. However, research reveals that although a preferential procurement system is in place, emerging contractor still face work flow problems(Shwala, 2018). Establishing policy and regulation by its own is not enough to develop the construction industry, unless it not involved in controlling and enforcement. For example, In the Australia; The technical planning and controlling expertise of a contractor is key in achieving project success(Doloi , 2010) see the literature review (Al-zahrani, 2013).

The study underlines that simplifying the registration and licensing processes, reducing the layers of bureaucracy and ensuring the government policies are consistently applied across all stakeholders will enhance operational efficiency and contractor confidence. The single most important means of promoting the development of the domestic construction industry is through the adoption of efficient and equitable contracting systems and procedures(Anny et al., 2015). Qualifications and experience levels of project managers and other management staff and their track records of working capital were reported to be significant in assessing the capabilities of the candidate contractors see the literature review (Al-zahrani, 2013). Policymakers should aim to separate political influence from the regulatory processes in order to create a stable, predictable, and transparent environment for contractors as some contractor interviewee was cited bureaucratic hurdles as a significant barrier to business performance.

### 4.11.9. Socio-Political Influences and Corruption within the system

The results found from the factor analysis provide a structured understanding of how various regulatory and political challenges interrelate and affect local contractors in Ethiopia. The strong correlations among regulatory factors indicate that improving clarity and enforcement of policies could enhance contractor performance significantly.

A few responses from the contractor side indicated that corruption and unethical practices, such as paying bribes to expedite processes, have been used as solutions to

cope with economic challenges. This raises concerns about transparency, fair competition, and long-term industry sustainability. As (Anny et al., 2015) mentioned in his study that, the American President, Barack Obama said to the Ghanaian parliament during his maiden African visit to Ghana, on July 11, 2009, that "Africa does not need strongmen, it needs strong institutions,". The pervasive effect of corruption on contractor performance requires targeted policy reforms to ensure that public procurement and regulatory activities are carried out fairly. Here are the respondent raises their suggestion on the role of government in fostering a better working environment; (1) eliminate corruption such that tackling corruption, enhancing governance, and improving the procurement system will help level the playing field for local contractors, allowing them to compete more effectively. (2) Reduce political interference that there is a desire to shield contractors from political influence, ensuring that projects are awarded based on merit and not political connections. Construction industry, (Sing & Tiong, 2006) studied 102 industry- based contractors' selection criteria and their perceived importance among the practitioner.

### 4.11.10. Effectiveness of the Strategies in improving performance from Interviewee

The study analyzed effectiveness of these strategies varied, but common themes have emerged as below:

Improved cost control and efficiency; cost reduction strategies, such as cost management and bulk purchasing, have proven effective in reducing overheads and improving profitability. Four of the local contractor's interviewee who have adopted these measures reported better financial health and operational stability.

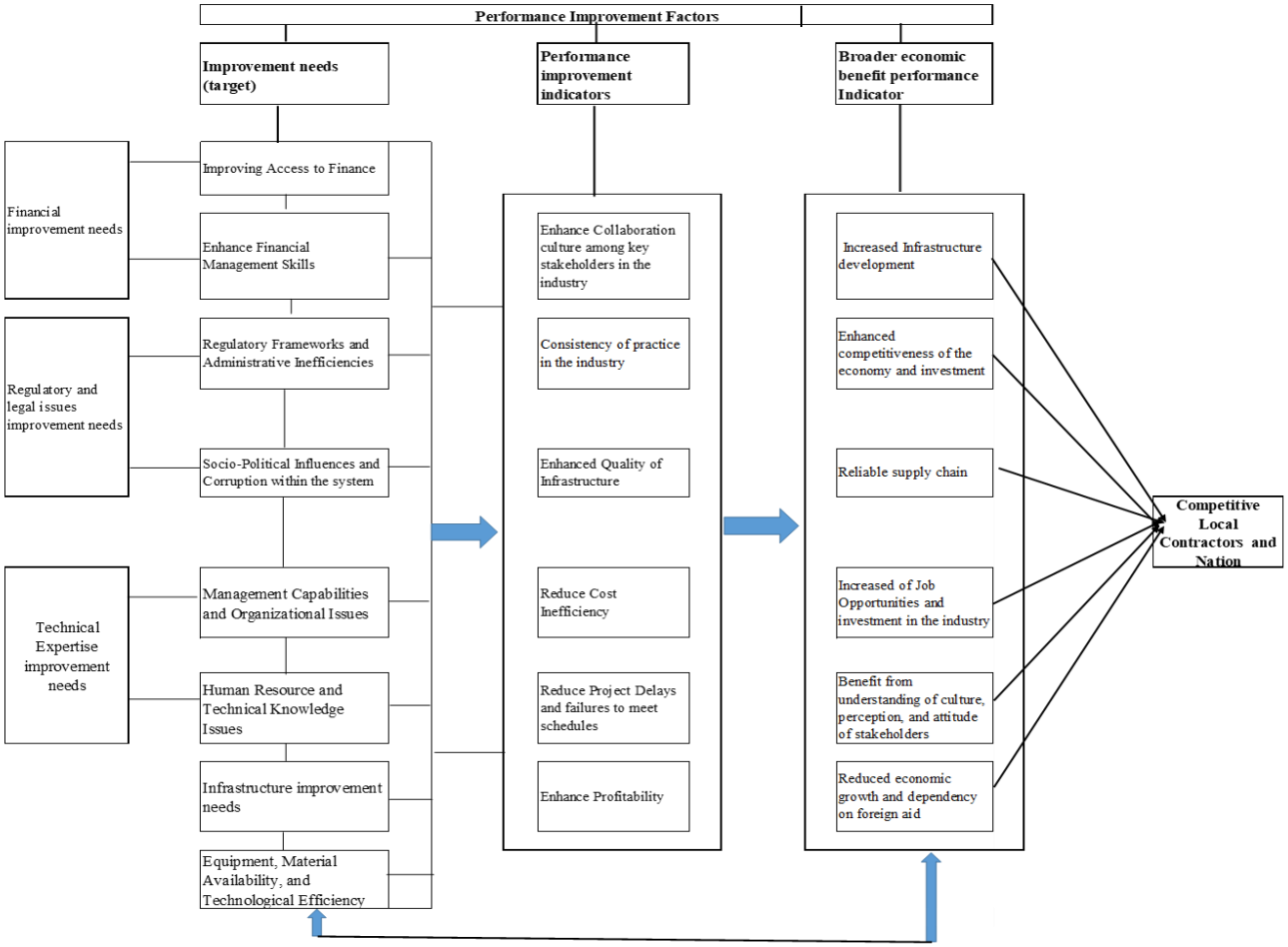
Diversification providing stability; contractors who diversified their services or entered new markets reported increased revenue streams, helping them withstand downturns in particular sectors. This was confirmed with two contractor respondent who have an additional business system supporting for such kind of strategies. For example interring in to investment at agricultural production.

Government and financial support; financial interventions by the government, such as facilitating access to funding and providing support for local businesses, were deemed vital for contractors to stay afloat. However, some contractors noted that government support could be more targeted and accessible. For example one contractor remarked that

government provision of finance especially for agriculture in terms of financing bank of for development as well as providing support for only these mega project like renaissance dam and other similar selected projects.

Productivity gains from technology; adoption of technology has enhanced productivity, particularly for firms that have embraced digital project management tools, reducing manual work and improving project timelines. This was confirmed by one consultant interviewee from observation in his supervision that a contractor was applied a GPS controlling method for his project managers as well as machineries work activities at project site.

Challenges in long-term adaptation**;** while short-term strategies like cost-cutting and financial management yield immediate results, long-term strategies such as market expansion, capacity building, and innovation require more significant investment and time to show measurable results. This was confirmed by another contractor interviewee that expands their business in production of industrial materials like UPVC, PC and prefabricated concretes to supply for stakeholders in the market.



*Source: Survey result and own computation (2025)*

***Figure 4. 4 Summary of improvement factors***

### 4.11.11. Summary of the Section

Findings in this chapter indicates that to improve local contractor's performance, performance improvement targets and indicators were developed. 14 core performance targets and indicators are suggested to measure improvement of the factor faces local contractors improved performance. These are Improving access to finance, Enhance financial management skills, Regulatory frameworks and administrative efficiencies, Socio-Political Influences and combating Corruption within the system, Enhance management capabilities and organizational Issues, Improving human resource and technical knowledge issues, Infrastructure development, Equipment and material availability, and Technological efficiency, Enhance collaboration culture among key stakeholders, Consistent practice in the industry, Enhanced quality of infrastructure, Reduce cost inefficiency, Reduce construction delays and failures to meet schedules and Enhance profitability.

# CHAPTER FIVE

# 5. CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Conclusions

This research initially focused on analyzing the key challenges impacting the performance of local contractors. A preliminary review of the literature identified crucial factors contributing to performance issues. A subsequent, more thorough review facilitated understanding these factors, identifying associated challenge variables, clarifying the relationships among the factors and between the factors and overall performance as well as suggesting potential improvements. Based on this understanding, a conceptual framework was logically developed to address poor performance. A key finding was that differences in researchers' perceptions regarding factor classification primarily stemmed from the contextual definitions applied to these factors.

To achieve these objectives, the study employed questionnaire surveys, interviews, and observations as research instruments. The questionnaire forwarded to 112 selected professionals and 97 valid responses were collected which accounts for 86.61% response rate. IBM SPSS version 25 software was used for descriptive and inferential statistics analysis, including frequency analysis, cross-tabulation, Cronbach‟s alpha (α), factor

analysis, and regression analysis to analyze the data. The preceding chapters presented and discussed the results of these analyses. This chapter summarizes the major research findings in relation to the study's objectives. The identified challenge factors, categorized by factor score by their presumed sources, include: financial constraints (access to finance and credit management (3.70), financial management and payment structures (3.54).); regulatory and legal issues (regulatory frameworks and administrative inefficiencies (3.53) and Socio-Political Influences and Corruption within the system (2.71); technical expertise variables (management capabilities and organizational issues (3.67) and human resource and technical knowledge issues (3.35); infrastructure issues (infrastructure deficiencies and the dominance of overseas contractors (3.53); and market dynamics-related challenges (equipment, material availability, and technological efficiency (3.78). These variables exhibit significant correlations with identified performance indicators of poor performance among local contractors. Factor analysis identified two components: Operational Inefficiencies and Stakeholder Issues (4.15) which score three main variables; (i) Poor relationship among key stakeholders (.864), (ii) Inconsistency of practice in the industry(.586) and (ii) Failure to meet quality standards (.894), and the second is financial performance failure (3.86) which score three main variables; (1) Cost overruns (.812), Project delays and failures to meet schedules (.607) and reduced profitability(.941).

The study's second objective assessed the economic impact of these challenges and factors related to poor contractor performance on the development of local contractors and the national economy within the study area. The findings revealed significant broader economic impacts, indicated by the following variables: (i) Slow Infrastructure development (.77), (ii) Reduced competitiveness of the economy and investment (.889), (iii) Unreliable supply chain (.703), (iv) Loss of job opportunities and investment in the industry (.829), (v) Influence of culture, perception, and attitude of stakeholders (.752) and (vi) reduced economic growth and dependency on foreign aid (.817). The regression model demonstrates a strong relationship between the independent variables (financial Constraints, Market Dynamics, Regulatory and Legal, Infrastructure Issues, and Technical Expertise) and the dependent variable (Economic Impact). The adjusted $R^2$ value indicates that 54.1% of the variance in economic impact is explained by the analyzed independent variables.

The third objective involved developing improvement frameworks and performance indicators for monitoring and tracking the improvement of these factors. An assessment of the required level of improvement indicated potential for advancement in all aspects of all factors. Considering the established targets, frameworks were developed for the respective targets. Six core performance indicators and six economic impact indicator factors were suggested for measuring the improvement of these factors and the broader economic computation, as depicted in Fig 5.1, to foster the development of local contractors and the nation. Performance measurement for industry development requires establishing appropriate systems and improving existing practices. This necessitates strengthening existing institutions for effective coordination, aligning applicable regulatory tools, and emphasizing the implementation of established policies and regulations.

## 5.2 Recommendation for further improvement

The objective of this study was to generate findings from the hypothesized problems addressed in the literature review through questionnaire survey, interview and observation. In addition, one of the specific objectives of this thesis was to forward recommendations based on the finding of the study. Based on these findings, the following recommendations are made to mitigate the challenges identified through the research processes.

**To improve local contractor construction financial challenges**

1. Alleviating financial challenges through targeted interventions (Establish collateral-free loans, provide short-term working capital financing, interest rate grants or loan forgiveness.
2. Ensure better coordination between regulatory authorities and contractors to align policy with operational realities through creating a dedicated link office or task force within the regulatory bodies, organize monthly or quarterly roundtable discussions and develop an online portal, Introduce real-time feedback systems to evaluate how effectively financial policies are supporting contractors and adjust accordingly.
3. Besides the government, financial institutions could work closely with contractors to develop specialized loan products such that flexible repayment terms (progressive disbursements and repayment), risk-sharing mechanisms

(partial government guarantees) and sector-specific loans (equipment leasing, material procurement financing, and payroll loans) that cater to the specific needs of the construction sector.

4. Policymakers should work to improve the availability of credit facilities, provide credit insurance, future cash flow projections and track records as collateral for loan approvals instead of solely relying on physical assets.
5. Providing training and capacity-building programs on, budgeting, financial and cash flow management through online courses, mentoring and coaching services from financial experts and this could include certification programs.
6. Develop industry-wide retention policies that set maximum retention percentages and define clear timelines for releasing retained funds clauses and providing clear guidelines for price adjustment mechanisms that automatically adjust contract prices based on market changes in labor and material costs

**To improve regulatory and legal issues challenge**

1. As the main issue is lies not in the policies themselves developing a monitoring and evaluation framework, setting dedicated policy enforcement teams such that for non-compliance should result in financial penalties, while successful adherence to policies should be rewarded through reduced taxes, access to government tenders, or other incentives.
2. Reducing bureaucratic hurdles through setting of clear and strict timelines for approvals and permits by establish maximum waiting periods and minimizing political interference such that separate government functions from political pressures and strengthening independence of regulatory bodies.
3. Simplifying the registration and licensing processes, focus on essential documentation and develop licensing platform where all necessary permits and licenses can be applied.
4. Policymakers should aim to separate political influence by limiting political appointments, set expert driven regulatory bodies, implement transparency and accountability mechanisms and ensure through regular audits.

**To improve technical expertise in the construction industry**

1. Skill development programs through encouraging public-partnerships and mentorships with international contractors to transfer technical skills, knowledge,

and best practices. Focus on construction technologies like Building Information Modeling (BIM), drone based site surveys, and green technologies.

2. Encourage contractors to adopt software tools such as Microsoft Project, Primavera, or enterprise resource planning (ERP) systems to improve project management, scheduling, budgeting, and communication.
3. Contractors should invest in leadership training, adopt modern project management software's (For example, Microsoft project), and improve communication encourage the establishment of cross-functional within teams and between government and contractors.
4. Contractors should invest in training programs that focus on enhancing technical skills, particularly for complex tasks, and implement strategies to reduce high labor turnover. This may include improving working conditions and offering better career development opportunities to retain skilled professionals.
5. There is a critical need to enhance management training, improve leadership skills, and integrate technology such as enterprise resource planning (ERP) software which can help construction firms manage all aspects of a project from procurement to scheduling, labor management, and budgeting.

**To improve local contractor infrastructure needs and job opportunities**

1. Policies aimed at enhancing local contractors' capabilities through training, funding, and technology would better equip them to compete with foreign firms.
2. Strengthening local infrastructure by fostering a more favorable environment for local contractors to participate more actively in large projects, public sector contracts can be reserved for local contractors enhance its competitive edge and self-reliance in the construction industry.

**To improve the market dynamism for local contractors**

1. Offer low-interest financing or tax incentives to local contractors for upgrading or acquiring new construction machinery and technology.
2. Foster partnerships between local contractors and suppliers, ensuring local firms get favorable pricing, timely deliveries, and preferential treatment. Consider government incentives to encourage local production of construction materials (e.g., cement, steel, aggregates).

3. Encourage local contractors to engage in long-term procurement agreements with material suppliers, form strategic alliances, or hedge against price volatility to stabilize costs.
4. Facilitate bulk purchasing agreements among local contractors for common materials to reduce procurement costs and stabilize material prices.
5. Governments can provide funding or tax breaks to help contractors acquire modern machinery and construction equipment, ensuring they remain competitive in large-scale projects.

**To improve poor performance local contractor**

1. Addressing all the related challenges with the above-mentioned recommendations will enhance local contractors' performance.
2. Address challenges such as cost overruns, delayed projects, and reduced profitability through better financial planning, risk management, and project scheduling. This can include regular use of project management software, and benchmarking performance against industry standards.

**To improve economic impact of local contractor in building nation**

1. Directed towards strengthening local construction companies through training, capacity building, and access to resources, which can help reduce reliance on foreign contractors and enhance the sector's competitiveness.
2. The attitudes of overseas contracting staff and the reliance on foreign contractors should be carefully managed to foster a more collaborative approach that benefits the local economy and workforce.
3. Create a long-term national construction development strategy to guide the growth of the sector, identifying key areas for investment, technological adoption, and regulatory improvements
4. Policies aimed at attracting both domestic and international investments in the construction sector are crucial to fostering growth, competitiveness, and long-term sustainability.

## 6.4 Direction for Further Study

The regression model demonstrates a strong relationship between the independent variables (CPP, MD, RL, II,TE and FC) and the dependent variable (EI), with the adjusted $R^2$ (coefficient of determination) explaining 54.1% of the factors influencing

local contractors' performance for sustainable economic development in Ethiopia. The five independent variables analyzed provide valuable insights into the challenges impacting contractor performance. However, to better understand how these specific factors contribute to broader performance issues, further research is needed to explore the remaining 45.9% of factors that influence contractor performance and contribute to the country's weak economic growth.

At the onset, this study highlighted the limitations of data, particularly in the area of local contractors' performance, especially project-based empirical studies and their contributions to national growth. Therefore, further research is needed to explore whether contractors currently participating in the construction industry have the capacity to survive or whether policy revisions are necessary for improvement.

Additionally, research should be conducted on strategies for the sustainable development of local contractors and their international competitiveness. It is important to assess whether the government's policies for the construction industry are designed with the goal of building a stable national economy or if they are merely aimed at maintaining political power. This could shed light on the failure to effectively implement strategies outlined in policies and regulations.

An investigation into the efficiency and challenges of capacity development initiatives is also warranted, focusing on how best practices from other developing countries can be adopted in Ethiopia's construction industry. Another key area for further study is to examine whether local contractors view their companies as contributing to national development or if their goals are limited to short-term profits.

Finally, since the use of locally available materials can reduce foreign currency expenditure and reflect national culture, more research should be conducted on materials that minimize financial strain and reduce costs. Moreover, the improvement mechanisms proposed in this study could be further validated through questionnaires and factor analysis to confirm their

# REFERENCES


Abraham, A. (2008). Improving Cost Management Practices of National Contractors Focused On Building Construction Projects. *MSc. Thesis, Addis Ababa, Ethiopia*.

Adnan, H. (2014). Bringing Industry and Acadamic Together for the Built Environment in the 21st Century. *International Conference in the Built Environment in the 21st Century Malaysia*, *1*(3).

Al-zahrani, J. I. (2013). The Impact of Contractors Attributes On Construction Project Success. *Dissertation,University of Manchester*.

Amoroso, D., & Thompson, C. (2006). The Current State of The Construction Industry, Examining the duality of I.S. executives, Report on the Ethiopian Economy. In *Ethiopian Economic Association (EEA),*.

Anny, A., Anthony, C., & Kehinde, O. (2015). Critical Issues in Reforming the Nigerian Construction Industry. *British Journal of Applied Science & Technology*, *5*(3), 321–332.

Anshebo, M. A., Mengesha, W. J., & Sokido, D. L. (2022). Selection of the Most Appropriate Sustainable Buildings Assessment Categories and Criteria for Developing Countries: Case of Ethiopia. *Urban and Regional Planning*, *7*(2), 55–67.

Asiedu, W. G. (2014). Construction Project Performance Measurement: A Review of the Philosophies, Concepts and Paradigms. *Africa Development and Resources Research Institute (ADRRI) Journal*, *5*(5), 74–91.

Ayalew, T., Dakhli, Z., & Lafhaj, Z. (2016). Assessment on Performance and Challenges of Ethiopian Construction Industry. *Quest Journals Journal of Architecture and Civil Engineering*, *2*(11), 01–11.

Baloi, D. (2003). Sustainable Construction Challenges and Opportunities. *Association of Researchers in Construction Management*, *1*, 289–297.

Bedada, A. T. (2023). An Analysis of How the Construction Business in Ethiopia Is Affected by the Rising Cost of Building Materials. *American Journal of Construction and Building*

*Materials*, *7*(1), PP,1-6.

Belachew, A. S., Mengesha, W. J., & Mohammed, M. (2017). Causes of Cost Overrun in Federal Road Projects of Ethiopia in Case of Southern District. *American Journal of Civil Engineering*, *5*(1), 27–40.

Belay, M. D., Tekeste, E. A., & AmboSintayehu Assefa. (2017). Investigation of Major Success Factors on Building Construction Projects Management System in Addis Ababa, Ethiopia. *American Journal of Civil Engineering*, *5*(3), 155–163.

Beshah, G. G., Mengesha, W. J., & Demiss, B. A. (2024). *Developing success evaluation criteria of building projects for Addis Ababa Ethiopia(Online). Available:* https://doi.org/10.1016/j.heliyon.2024.e31770. Access date: 27 May 2024

Bhandari, M., Id, O., Mishra, A. K., & Bhandari, S. (2018). Performance Assessment of ongoing Construction projects under Town Development Fund, Nepal. *International Journal of Advanced Research in Civil & Structural Engineering*, *1*(1), 1–13.

Bharti, M. S. (2023). The Sustainable Development and Economic Impact of China's Belt and Road Initiative in Ethiopia. In *East Asia* (Vol. 40, Issue 2, pp. 175–194).

Demissew, A., & Abiy, F. (2023). Causes and Impacts of Delays in Ethiopian Public Construction Projects. Case on Debre Markos University Construction Projects. *Advances in Civil Engineering,Debre Markos,Ethiopia.*

Dereje, H. M., & Mengesha, W. J. (2023). Contractors Competitiveness Measurement in International Competitive Bid of Ethiopian Road Projects. *International Journal of Management and Humanities (IJMH)*, *9*(6), 19–30.

Desta, S. S. (2015). The Management of Construction Processes in Developing Countries: A Case Study of the Ethiopian Roads Authority. *Dissertation, University of Cape Town*.

Didibhuku, T. W., & Jacob, P. M. (2009). An exploratory study of problems facing small contractors in the North West province of South Africa. In *African Journal of Business Management* (Vol. 3, Issue 10, pp. 533–539).

Enshassi, A., Al-hallaq, K., & Mohamed, S. (2006). Causes of Contractor ' s Business Failure in Developing Countries , The Case of Palestine Causes of Contractor ' s Business Failure in Developing Countries. *Journal of Construction in Developing Countries*.

Esaiyas, S., & Kahssay, G. (2020). Challenges Facing Local Contractors Working with Chinese Contractors in Addis Ababa Building Projects. In *American Journal of Civil Engineering* (Vol. 8, Issue 4, pp. 87–96).

FDRE. (2010). Federal Democratic Republic of Ethiopia Growth: Growth and Transformation Plan (GTP I) (2010/11-2014/15), Volume 1. *Ministry of Finance & Economic Development, Addis Ababa*, *1*(8), 14–120.

Gemeda, H. B. (2003). Effect of poor project performance on the quality of housing construction: Case of condominium houses in Addis Ababa. *MSc. Thesis, The Netherlands (IHS)*.

Gezahegne, G. (2011). Assessment of Conditions of Contract Problems in Ethiopian Construction Industry. *MSc, Thesis, Addis Ababa, Ethiopia*.

Górecki, J., Núñez-cacho, P., & Rutkowska, M. (2022). Study on Circular Economy Implementation Propensity of Construction Companies in Context of Prevailing Management Styles. *Applied Sciences ,Switzerland*.

H/Gebriel, A. T. (2004). Model Development for Improving the Performance of Projects. *MSc. Thesis, Addis Ababa University, Ethiopia.*

Haile, K. (2022). Construction Factors Affecting Sustainable Building Projects : the Case of Addis Ketema Sub City Graduate Program in Mba Construction Management. *MSc, Thesis, Addis Ababa*.

Hamid, A., Singh, B., Yusof, A., & Abdullah, N. (2011). The Employment of Foreign Workers at Construction Sites. *2011 2nd International Conference on Construction and Project Management, Malaysia*, *15*, 126–130.

Hampson, K. D. (2005). Projecting change through construction innovation. *CEO, CRC for Construction Innovation, Qld, Australia Summary*.

Hareru, W., Neeraj Jha, K., Koshe, W., & Jha, K. N. (2016). Investigating Causes of Construction Delay in Ethiopian Construction Industries. *Journal of Civil, Construction and Environmental Engineering*, *1*(1), 18–29.

Hoffman, D. W. (2002). *Agenda 21 for Sustainable Construction in Developing Countries. By the CSIR Building and Construction Technology,Pretoria.*

Huang, S. (2022). Disruptive technology and industrial policy paradigm shifts: a discussion based on China Open Access Asian Review of Political Economy. *Asian Review of Political Economy*.

Kassie, H. W. (2019). *Factors Affecting Time Performance of Local Road Contractors on Federal Road Construction Projects. MSc, thesis, Addis Ababa University.*

Kifle, W. (2013). *Factors Affecting Time Performance of Local Road Contractors on Federal Road Construction Projects. MSc, thesis, Addis Ababa University.*

Kiggundu, B. M. (1999). Institutional Challenges to Contractor Development. *UCCIDAH in Conjunction with Department of Civil Engineering and Department of Architecture*.

Kumaraswamy, M. M. (2006). Accelerating Construction Industry Development. *Journal of Construction in Developing Countries*, *11(1)*(73–94).

Kurniawati, P. (2017). Project Management Maturity in the Construction Industry of Developing Countries, The Case of Ethiopian Contractors. *Universitas Nusantara PGRI Kediri*.

Linh, L. K. (2023). The Current Issue of Sustainable Development for Construction Contractors in Vietnam. *Journal of Economics, Finance and Management Studies*, *06*(10), 4716–4723.

Maqsoom, A., Khan, A. Q., Ali, U., & Mehmood, F. (2016). Foreign market entry: an analysis of barriers and market entry modes adopted by Pakistani contractors. *International Organizing Committee*, 290.

Melaku, B. S., Tilahun, S., Yehualaw, M., Matos, J., Sousa, H., & Workneh, E. T. (2021). Analysis of Cost Overrun and Schedule Delays of Infrastructure Projects in Low Income Economies: Case Studies in Ethiopia. *Advances in Civil Engineering*.

Mengistu, D. G. (2019). Improving determinant factors to facilitate construction industry development in Ethiopia. *Dissertation,National Institute of Technology Karnataka, Surathkal, Mangalore.*

Mengistu, D. G., Ashene, D. A., & Beyene, M. M. (2023). Micro and Small Enterprises' Development in Ethiopian Construction Industry: The Challenges and Improvement Regulatory Framework. *Journal of Construction in Developing Countries*.

Mitikie, B. B., Lee, J., & Lee, T. S. (2017). The Impact of Risk in Ethiopian Construction Project Performance. *Open Access Library Journal*, *04*(12), 1–7.

Mosisa, A. (2013). *Contributions of Small , Medium and Micro Enterprise Contractors on road Construction Projects in Ethiopia. MSc Thesis, Addis Ababa, University*.

MUDC. (2012). *Construction Industry Policy. Ministry of Urban Development and Construction. Addis Ababa, Ethiopia.*

Mulu, Y. Z. (2018). Construction Technology Transfer for Construction Works in Ethiopia : The Cases of Grade One General Contractors. *MSc, Thesis, Addis Ababa, Ethiopia.*

Mustefa, A. J. (2015). *Factors Affecting Time and Cost Overrun in Road Construction Projects, MSc. Thesis, Addis Ababa*. 00–25.

Nigussie, A. (2015). Work Programming and Implementation Practice in Ethiopian Federal Road Project. *MSc, Addis Ababa ,Ethiopia.*

Ofori, G. (1980). *The Construction Industries of Developing Countries: The Applicability of Existing Theories and Strategies for their Improvement and Lessons For the Future. Dessertaton, Ghana.*

Ofori, G. (1999). *Construction Contractor Development: New directions. Proceedings of CIB-*

*TG29, Contractor Development,*.

Ofori, G. (2009). *Challenges of Construction Industries in Developing Countries : Lessons from Various Countries. Department of Building, National University Singapore*.

Paul, W. F. (2013). *Construction industry development: Analysis and Synthesis of Contributing Factors. Dissertation, Queensland University Technology, South Africa.*

Qin, Y., & Ofori, G. (2000). Challenges of Construction Industries in Developing Countries. *Open Journal of Business and Management*.

Regassa, B. (2015). *AStudy of Performance Based Road Maintenance Contracting System for Ethiopian Federal Roads. MSc thesis, Addis Ababa ,Ethiopia.*

Reta, M. (2020). Survey of Chief Factors Influencing the Growth of Construction Activities. *International Journal of Advanced Research in Engineering and Technology (IJARET)*, *11*(10), 67–79.

Salim, M. S., Zakaria, R., Aminuddin, E., Abdul Hamid, A. R., Abdullah, R., & Khan, J. S. (2018). The factors impacted to local contractor from Foreign Direct Investment in advancing economic hub development in Iskandar Malaysia. *IOP Conference Series: Earth and Environmental Science*, *12*(6), 367–377.

Shumuye, M. Y. (2015). The Role of Developmental State in Development: The Case of Ethiopia. *International Journal of African and Asian Studies*, *14*, 96–110.

Shwala, L. (2018). Challenges Facing Emerging Contractors in Kwazulu - Natal. *MSc, Thesis ,Johannesburg,South Africa*.

Tadewos, S. G., Malek, S. S., & Patel, D. (2018). Challenges of Building Construction in Mekelle city , Ethiopia : from Contractors ' perspective. *Journal of Emerging Technologies and Innovative Research*, *5*(3), 420–424.

Tecle, H., & Mahelet, S. (2009). *Construction Law,2009 Sponsored by the Justice and Legal System Research Institute*.

Trunk, A., & Birkel, H. (2022). No Resilience Without Partners: A Case Study on German Small and Medium-Sized Enterprises in the Context of COVID-19. *Schmalenbach Journal of Business Research*, *74*(4), 537–574.

Un-Habitat. (2017). The State of Latin American and Caribbean Cities 2012: Towards a new urban transition:The State of AddisAbaba 2017. In *Un-Habitat* (Vol. 1, Issue 1).

Van, W., & Llewellyn. (2006). *Foresight studies and reform initiatives in construction: Lessons for developing countries*.

Worku, Z. (2016). Developmental obstacles adversely affecting emerging contractors in the construction industry of Limpopo Province. In *Problems and Perspectives in Management* (Vol. 14, Issue 4, pp. 170–180).

Wubet, W. A., Burrow, M., & Ghataora, G. (2023). Risks affecting the performance of Ethiopian domestic road construction contractors. *International Journal of Construction Management*, *23*(4), 639–647.

Wubet, W. A., Burrow, M., & Ghataora, G. (2024). Risks affecting the performance of Ethiopian domestic road construction contractors Risks affecting the performance of Ethiopian domestic road construction contractors. *International Journal of Construction Management*, 1–9.

Yada, A. L., & Yadeta, F. T. (2021). *Factors Affecting the Performance of Construction Project under Oromia Industry and Urban Development Bureau, Ethiopia*. *4*(2), 1–56.

Zawdie, G., & Langford, D. (2020). The state of construction and infrastructure in Sub-Saharan Africa and strategies for a sustainable way forward. *2nd International Conference in Developing Countries: Challenges Facing the Construction Industry in Developing Countries*.

Zewdu, Z. T. (2016). Construction Projects Delay and Their Antidotes: The Caseof Ethiopian Construction Sector. *International Journal of Business and Economics Research*, *5*(4).

## Appendix A: Questionnaire Survey and Interview Questionnaires

**Addis College,**
**School of Graduate Studies,**
**Construction Technology and Management**
**Addis Ababa**

# Questionnaire Used for Data Collection

Dear Respondent,

I am conducting research on the "***Economic Impact Analysis of the Challenges and Poor Performance of Local Contractors in Ethiopia****"* as part of my MSc study in Construction Technology and Management at Addis College. The purpose of my study is to analyze the economic impact of local contractors' poor performance, identify the key challenges they face, and explore mechanisms for improvement.

The survey will take approximately 10-15 minutes, and I would greatly appreciate your time in completing it. Your insights will provide invaluable understanding of the challenges and poor performance of local contractors, which significantly impact the economy in Ethiopia. The questionnaire consists of four sections, each with specific objectives:

- Background Information
- Key Challenges Facing Local Contractors
- Challenges Impact on Contractor Performance and Economic Impact of Poor Performance
- Semi-Structured Interview Guide Questions

All data collected will be used solely for academic research and will remain strictly confidential. Participation is voluntary; if you have any questions regarding the survey, feel free to contact me at the email address or phone number below. Thank you very much for your valuable time and cooperation.

Yours faithfully,
Hadush Tesfay Gebreabezgi
hadusht16@gmail.com
Phone No: 0962605056

## Section 1: Background Information

1. What is your role in the construction industry? (Tick appropriate box)

   ☐ Local contractor

   ☐ Consultant

   ☐ Client/owner

   ☐ Government official

   ☐ Regulatory body

   ☐ Other (please specify): _____

2. Your experience in Construction Industry (Tick appropriate box)

| 0-5 | 6-10 | 11-15 | 16-20 | 21+ |
|---|---|---|---|---|

3. Personal involvement (Tick appropriate box)

| Owner | Partner | Employee | Others (Specify)…….. |
|---|---|---|---|

4. Educational background: (Tick appropriate box)

| Diploma | BSc. | MSc. | PhD. | Others (Specify)……..... |
|---|---|---|---|---|

5. Your Profession(Tick appropriate box)

   ☐ Architect, ☐ Quantity Surveyor

   ☐ Civil/Structural Engineer, ☐ Project/Construction Manager

   ☐ Building Service Engineer, ☐ Other.....

6. Organization's Year of establishment/year of experience

_____

Is currently participate in the construction industry?

☐ Yes ☐ No

If your answer is no write your reason

_____

_____

_____

7. Your Organization Participation in the infrastructure construction (Tick appropriate box)

☐ Building ☐ Road ☐ Waterworks/Dam ☐ Commercial ☐ Residential

☐ General (all infrastructure) ☐ Other (list).....

## Section 2: Key Challenges Facing Local Contractors

To what extent do you agree that the following factors are challenges for local contractors in Ethiopia? Rank as: [1] = Strongly Disagree, [2] = Disagree, [3] = Neutral, [4] = Agree, [5] = Strongly Agree

| No | Challenging Factors | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| **2.1** | **Financial constraints** | | | | | |
| 2.1.1 | Access to Credit and finance | | | | | |
| 2.1.2 | Access to foreign currency | | | | | |
| 2.1.3 | Book-keeping | | | | | |
| 2.1.4 | Finance and credit management | | | | | |
| 2.1.5 | Problems in obtaining guarantee bonds, sureties and insurance bonds | | | | | |
| 2.1.6 | Applicable Price adjustment mechanism | | | | | |
| 2.1.7 | Applicable Retention amount and mode of payment | | | | | |
| **2.2** | **Regulatory and Legal Issues** | | | | | |
| 2.2.1 | Absence of clear policy and regulations to properly guide the industry | | | | | |
| 2.2.2 | Capacity of regulatory bodies, i.e. relevant government departments | | | | | |
| 2.2.3 | Efficiency of registration system (firms and professionals) | | | | | |
| 2.2.4 | Enforcement/ proper guide of the policy and regulations | | | | | |
| 2.2.5 | Suitability of the applicable Procurement system | | | | | |
| 2.2.6 | Instability & dynamism of regulatory authorities and institutes | | | | | |

| No | Challenging Factors | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 2.2.7 | Political influence on government policy | | | | | |
| 2.2.8 | Government bureaucracy | | | | | |
| 2.2.9 | Government intervention | | | | | |
| 2.2.10 | Corruption and lack of transparency | | | | | |
| **2.3** | **Technical Expertise** | | | | | |
| 2.3.1 | Lack of competent and experienced professionals in the field | | | | | |
| 2.3.2 | Skilled labour high turnover | | | | | |
| 2.3.3 | Limited technical knowledge | | | | | |
| 2.3.4 | Appropriateness of training and education availability | | | | | |
| 2.3.5 | Shortage of skilled operators | | | | | |
| 2.3.6 | Limited management capabilities/ skills | | | | | |
| 2.3.7 | Influence of senior construction manager perceptions | | | | | |
| 2.3.8 | Leadership and team communication problem | | | | | |
| 2.3.9 | Less application of information technology in the industry | | | | | |
| 2.3.10 | Poor information management i.e. poor documentation and lack of organized data | | | | | |
| 2.3.11 | Communication between Government and Contractors | | | | | |
| 2.3.12 | Collaboration and Partnerships | | | | | |
| **2.4** | **Infrastructure issues** | | | | | |
| 2.4.1 | Lack of infrastructure and Job Opportunities access | | | | | |
| 2.4.2 | Infrastructure dominated by overseas contractors | | | | | |
| **2.5** | **Market Dynamics** | | | | | |
| 2.5.1 | Availability of equipment and materials | | | | | |
| 2.5.2 | Availability of plant & machinery | | | | | |
| 2.5.3 | Inefficiency of equipment and plant technology | | | | | |
| 2.5.4 | Fluctuations in material prices | | | | | |

Please briefly describe any other factors, other than the above, that may challenge local contractor's performance:

_____

## Section 3: Challenges and Poor Performance Impact on Economic

This part has two subsections, the first section, part 3.1, is to rank the extent of the poor performance variables. The other section, part 3.2, is to rank the extent the poor performance of local contractors' economic impact.

### Part 3.1: Contractor poor performance variables

To what extent do you agree that the challenges faced by local contractors lead to the following issues? Rank the level of impact as: [1] = Strongly Disagree, [2] = Disagree, [3] = Neutral, [4] = Agree, [5] = Strongly Agree)

| No | Impact | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| | **Cost Efficiency** | | | | | |
| 3.1.1 | Cost overruns | | | | | |
| 3.1.2 | Reduced profitability | | | | | |
| | **Competitiveness** | | | | | |
| 3.1.3 | Reduced competitiveness/week capacity | | | | | |
| 3.1.4 | Inconsistence of practice in the industry | | | | | |
| | **Project Completion Rates** | | | | | |
| 3.1.5 | Project delays and failures to meet schedules | | | | | |
| 3.1.6 | Low labor productivity | | | | | |
| 3.1.7 | Low equipment productivity | | | | | |
| | **Quality of Work** | | | | | |
| 3.1.8 | Reworks/ poor workmanship | | | | | |
| 3.1.9 | Failure to meet quality standards | | | | | |
| | **Client Satisfaction** | | | | | |
| 3.1.10 | Lack of collaborative culture in the industry | | | | | |
| 3.1.11 | Poor relationship among key stakeholders | | | | | |

In your experience, what is the approximate percentage increase in project costs due to the challenges faced by local contractors? _____ %. (Tick appropriate box)

☐ 0 ☐ 0-10 ☐ 11-20 ☐ 11-20 ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ 51+

## Part 3.2: Economic Impact variables

To what extent do you agree that the poor performance of local contractors has the following economic impacts? Rank the level of impact as: [1] = Strongly Disagree, [2] = Disagree, [3] = Neutral, [4] = Agree, [5] = Strongly Agree

| No | Impact | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| | **Employment Creation** | | | | | |
| 3.2.1 | Lower employment in the industry | | | | | |
| 3.2.2 | Influence of culture, perception and attitude of stakeholders | | | | | |
| | **Economic Growth** | | | | | |
| 3.2.3 | Negative impact on gross domestic product(GDP) | | | | | |
| 3.2.4 | Economic cooperation i.e. dependency on foreign aid | | | | | |
| | **Investment Attraction** | | | | | |
| 3.2.5 | Reduced investment in construction | | | | | |
| 3.2.6 | Reduced competitiveness of the economy | | | | | |

| No | Impact | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 3.2.7 | Unreliable supply chain | | | | | |
| | **Infrastructure Development** | | | | | |
| 3.2.8 | Slower growth of the construction sector | | | | | |
| 3.2.9 | Dependence on overseas contractors | | | | | |
| 3.2.10 | Influence of attitudes of overseas contracting staff | | | | | |

In your opinion, what is the approximate percentage reduction in construction sector gross domestic product (GDP) growth due to the challenges faced by local contractors? _____ % . (Tick appropriate box)

☐ 0 ☐ 0-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26+

**Recommendations**

What measures do you think should be taken, other than the above described to address the challenges faced by local contractors and improve their performance?

(Please provide your suggestions):_____

_____

| Section 4: Semi Structured Interview Guide Questions | | |
|---|---|---|
| **No.** | **Interview questions** | **Probing Questions** |
| 1 | Can you describe the main challenges local contractors face in securing and completing projects in Ethiopia? _____ | How do these challenges affect project timelines and costs _____ |
| 2 | In your experience, how does the performance of local contractors compare to international contractors in terms of quality and efficiency? _____ | What factors contribute to any differences you observation _____ |
| 3 | What role do government policies and regulations play in supporting or hindering the performance of local contractors? _____ _____ | Can you provide specific examples of policies that have had a significant impact_____ _____ |
| 4 | How do issues such as access to financing, skilled labor, and technology influence the competitiveness of local contractors? _____ _____ | What strategies do you think could mitigate these issues _____ |
| 5 | What strategies have you implemented to cope with the economic challenges? _____ _____ | How effective have these strategies been in improving your performance_____ _____ |
| 6 | What is the overall economic impact of poor performance among local contractors on the local community and the economy as a whole? _____ _____ _____ | How do you believe improving contractor performance could benefit economic development in Ethiopia_____ _____ _____ |

Thank you for your participation in this survey. Your responses will contribute to a better understanding of the economic impact of challenges and poor performance of local contractors in Ethiopia.

## Appendix B: rho's (ρ) Rank Order Correlation Test of Group of stakeholders

| (1) rho's rank order correlation test of group for financial constraints | | |
|---|---|---|
| **Pair of Groups** | **Spearman's ρ** | **Level of Correlation** |
| Client & Cons. | 0.875 | strong +ve |
| Client & Gov. | 0.768 | strong +ve |
| Client & Cont. | 0.821 | strong +ve |
| Client & Reg. | -0.143 | weak -ve |
| Cons. & Gov. | 0.75 | strong +ve |
| Cons. & Cont. | 0.661 | strong +ve |
| Cons. & Reg. | -0.125 | weak -ve |
| Gov. & Cont. | 0.696 | strong +ve |
| Gov. & Reg. | -0.232 | weak -ve |
| Cont. & Reg. | -0.5 | moderate -ve |
| **(2) rho rank order correlation test of group for regulatory and legal issues** | | |
| **Pair of Groups** | **Spearman's ρ** | **Level of Correlation** |
| Client & Cons. | 0.388 | weak +ve |
| Client & Gov. | 0.667 | strong +ve |
| Client & Cont. | 0.321 | weak +ve |
| Client & Reg. | 0.915 | very strong +ve |
| Cons. & Gov. | 0.794 | strong +ve |
| Cons. & Cont. | 0.727 | strong +ve |
| Cons. & Reg. | 0.267 | weak +ve |
| Gov. & Cont. | 0.655 | strong +ve |
| Gov. & Reg. | 0.57 | moderate +ve |
| Cont. & Reg. | 0.055 | very weak+ve |
| **(3) rho's rank order correlation test of group for technical expertise** | | |
| **Pair of Groups** | **Spearman's ρ** | **Level of Correlation** |
| Client & Cons. | 0.444 | moderate +ve |
| Client & Gov. | 0.5 | moderate +ve |
| Client & Cont. | 0.469 | moderate +ve |
| Client & Reg. | 0.934 | very strong +ve |
| Cons. & Gov. | 0.07 | very weak +ve |
| Cons. & Cont. | 0.717 | strong +ve |
| Cons. & Reg. | 0.427 | moderate +ve |
| Gov. & Cont. | 0.08 | very weak +ve |
| Gov. & Reg. | 0.685 | strong +ve |
| Cont. & Reg. | 0.458 | moderate +ve |
| **(4) rho's rank order correlation test of group for infrastructure issues** | | |
| **Pair of Groups** | **Spearman's ρ** | **Level of Correlation** |
| Client & Cons. | - | no correlation |
| Client & Gov. | - | no correlation |
| Client & Cont. | -1 | very strong -ve |
| Client & Reg. | - | no correlation |
| Cons. & Gov. | 1 | very strong -ve |
| Cons. & Cont. | - | no correlation |

| | | |
|---|---|---|
| Cons. & Reg. | 1 | very strong -ve |
| Gov. & Cont. | - | no correlation |
| Gov. & Reg. | 1 | very strong -ve |
| Cont. & Reg. | - | Moderate |
| **(5) rho's rank order correlation test of group for market dynamics** | | |
| **Pair of Groups** | **Spearman's ρ** | **Level of Correlation** |
| Client & Cons. | 0.3 | weak +ve |
| Client & Gov. | -0.3 | weak -ve |
| Client & Cont. | 0.7 | strong +ve |
| Client & Reg. | 0.8 | very strong +ve |
| Cons. & Gov. | 0.6 | strong +ve |
| Cons. & Cont. | 0.4 | moderate +ve |
| Cons. & Reg. | 0.1 | weak +ve |
| Gov. & Cont. | -0.4 | moderate -ve |
| Gov. & Reg. | -0.1 | very weak -ve |
| Cont. & Reg. | 0.3 | weak +ve |
| **(6) rho's rank order correlation test of group of poor performance** | | |
| **Pair of Groups** | **Spearman's ρ** | **Level of Correlation** |
| Client & Cons. | 0.623 | strong +ve |
| Client & Gov. | 0.477 | moderate +ve |
| Client & Cont. | 0.641 | strong +ve |
| Client & Reg. | 0.632 | strong +ve |
| Cons. & Gov. | 0.764 | strong +ve |
| Cons. & Cont. | 0.564 | moderate +ve |
| Cons. & Reg. | 0.709 | strong +ve |
| Gov. & Cont. | 0.573 | moderate +ve |
| Gov. & Reg. | 0.773 | strong +ve |
| Cont. & Reg. | 0.7 | strong +ve |
| **(7) rho's rank order correlation test of group of EI** | | |
| **Pair of Groups** | **Spearman's ρ** | **Level of Correlation** |
| Client & Cons. | 0.37 | week +ve |
| Client & Gov. | 0.709 | strong +ve |
| Client & Cont. | 0.503 | moderate +ve |
| Client & Reg. | 0.812 | very strong +ve |
| Cons. & Gov. | 0.564 | moderate +ve |
| Cons. & Cont. | 0.2 | week +ve |
| Cons. & Reg. | 0.533 | moderate +ve |
| Gov. & Cont. | 0.6 | strong +ve |
| Gov. & Reg. | 0.921 | very strong +ve |
| Cont. & Reg. | 0.606 | strong +ve |