



SELINUS UNIVERSITY
BUSINESS SCHOOL

**MAXIMIZING THE CAPACITY OF ETHIOPIAN LOCAL
CONTRACTORS IN THE CONSTRUCTION INDUSTRY: A
CASE OF FAILED IMPLEMENTATION**

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A DISSERTATION

Presented to the Department of
Management
program at Selinus University Business School

Faculty of Business School
in fulfillment of the requirements
for the degree of Doctor of Business Administration in
Management

2024

DECLARATION

I, Samson Bekure hereby declare that:

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ACKNOWLEDGMENT

My efforts have been supported by so many individuals that it is impossible to list everyone here. However, I must specifically mention Prof. Salvatore Fava, my Thesis General Supervisor, to whom I am profoundly grateful for his invaluable guidance, encouragement, support, and supervision, which enabled me to complete this internship and dissertation.

I am also deeply thankful to my longtime friend and colleague, Mr. Zerihun Nuru, and my beloved daughter, Amran Samson (Kimemie, as I always call her), for their tremendous support. Their dedication in collecting all the necessary data, interviewing the target groups, and organizing the collected information allowed me to focus on my research work and complete it in a timely manner. I am immensely grateful for their unwavering support in this regard.

Lastly, I would like to express my heartfelt gratitude and appreciation to my family and friends for their unwavering support and encouragement throughout this journey.

DEDICATION

I dedicate this work to my beloved wife, Mrs. Kalkidan Tadesse, and our children for all their love and attention, which have made it possible for me to reach this point.

ABSTRACT

With the expansion of modern industries in the twentieth century, Ethiopia's construction industry has predominantly been operated by foreign entities with a local workforce. The ECI faces various developmental challenges, often resulting in negative conditions for local contractors. There has been a deteriorating trend in the ECI, characterized by numerous failing projects and significant issues such as excessive foreign outsourcing, lack of governance, inadequate infrastructure, and insufficient skills. Additionally, the industry is plagued by corruption, financial and political instability, and problematic government policies.

This study's introduction provided an overview of the research topic, focusing on the problems hindering the capacity maximization of Ethiopian local contractors. The literature review encompassed a wide range of past studies, journals, and research articles to gain a comprehensive understanding of the construction industry, ECI, and local contractors from both global and Ethiopian contexts. The methodology outlined the selected research methods, which included a survey of 103 respondents and interviews with 14 participants from the ECI, including contractors, consultants, and policymakers. The survey data was analyzed using SPSS, while the interview transcripts were evaluated thematically.

The research findings were illustrated and comprehended through data analysis and discussion. Although the ECI was found to be in a slightly poor condition, numerous issues and challenges were identified, particularly for local contractors. These challenges include a lack of industrial and technical knowledge and skills, inadequate infrastructure support, poor governance, limited financial aid, insufficient governmental support, and the problem of foreign outsourcing. The research provided detailed insights into these problems and proposed possible methods to maximize the capacity of local contractors in the ECI. These findings also informed recommendations for both local contractors, policymakers, and the broader ECI.

Keywords: Ethiopia, Construction Industry, ECI, Local Contractors, Government, Policies, Skill, Innovation, Infrastructure, Financial Aid, Outsourcing, Training, Capacity Maximization

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ACRONYMS AND ABBREVIATIONS

AI: Artificial Intelligence
ANOVA: Analysis of Variance
BIM: Building Information Model
CCM: City and Construction Minister
CI: Construction Industry
CM: Construction Management
CPO: Compulsory Purchase Order
CSCEC: China State Construction Engineering Corporation
ECI: Ethiopian CI
EMI: Ethiopian Management Institution
EPRDF: Ethiopia People's Revolutionary Democratic Front
EXIM Bank: Export-Import Bank
FDI: Foreign Direct Investment
FDRE: Firm and Dispatchable Renewable Energy
FGD: Focused Group Discussion
GTP: Growth Transportation Plan
HRD: Human Resource Development
IC: Industrialized Construction
ICB: International Competitive Bidding
ISO: International Organization for Standardization
IT: Information Technology
LC: Letter of Credit
MNC: Multinational Corporation
NGO: Non-government Organization
OSH: Occupational Safety and Health
PA: Price Adjustments
PM: Project Management
PMI: PM Institute
PMML: PM Maturity Level

PPP: Public-Private Partnership

SEZ: Special Economic Zone

SPSS: Statistical Package for Social Sciences

UNCTAD: United Nations Conference on Trade and Development

USD: US Dollars

VAT: Value-Added Tax

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CHAPTER 1: INTRODUCTION

This section discusses the capacity maximization of Ethiopian local contractors in the CI and its failed implementation. It is divided into ten subsections, beginning with the history and development of Ethiopia's CI. It then covers policies, local contractor capacity building, and challenges in the CI. The chapter concludes with the research problem statement and the study's aims and objectives.

1.1. History and Development of the ECI

The rise of modern science and technology has significantly advanced practices in the global construction sector, each country with its unique history. The construction sector is truly historic in ancient civilizations like India, China, and Egypt. This research study focuses on the CI, which began to take shape globally in the 17th and 18th centuries (Stephenson, 2020). However, the modern CI progressed during the industrial revolutions of the 20th century. Ethiopia, historically not part of an ancient civilization or advanced tribes, did not develop its CI early on as other parts of the world did. Modern industries began emerging in Ethiopia in the 1920s, with most industrial entities being foreign-owned and hiring local workers due to the low labor cost. World War II disrupted industrial development, but after the 1950s, industries began to revive with an influx of foreign firms (Legide, 2021). The Derg regime introduced Significant industrial reforms in 1974, forming a socialist government and adopting nationalization strategies (Legide, 2021).

With the aid of the Industrial Revolution, the trend of building skyscrapers began in various countries worldwide, including the US, China, the UK, and many European nations. Ethiopia also constructed a few skyscrapers during the 20th century, with buildings exceeding 10-20 stories. The CI in Ethiopia included buildings, roads, bridges, and architecture (Tolqin, 2021). While architecture is crucial, constructing buildings, roads, and bridges is essential for a country's prosperity and modernization. Although initially not considered an independent sector because it did not generate wealth like other industries, the CI quickly became Ethiopia's largest employer, accounting for nearly 50% of the workforce. Infrastructure is essential as it attracts economic opportunities. Still, the construction sector could be riskier due to significant time and money

investment and potential disruptions from political, geographical, and social causes (Siraj & Fayek, 2019). Dependence on foreign entities for raw materials and resources increases construction costs (UNCTAD, 2021). Ethiopia's CI progress stagnated in the 1990s due to the need for developmental objectives, inadequate coordination between industry and infrastructure programs, and heavy dependence on foreign resources (Legide, 2021).

It is a fact that the construction sector does not contribute to generating wealth, but for every nation, infrastructure is essential as it attracts economic opportunities. Worldwide, it is said that the riskiest industrial sector is the construction sector as it involves lots of investment of time and money, and there is a high probability that construction may be disrupted due to any of the causes, including political, geographical, and social (Siraj & Fayek, 2019). Assets and raw materials play a significant role in planning construction costs in the Construction sector. The greater the dependence on foreign entities for raw materials and other construction resources, the higher the construction cost will be (UNCTAD, 2021). The CI of Ethiopia only progressed a little, even though various steps were taken to boost the sector. The failure of the Ethiopic CI in the 1990s was due to the country's lack of developmental objectives, inadequate coordination between the industry and infrastructure programs, and heavy dependencies of Ethiopia on foreign resources like materials, expertise, and equipment.

Ethiopia witnessed the failure of the CI not only after the year 1991 but even before 1991. Ethiopia was among those countries of Africa that no European power colonized, except for the occupation by Italy. Even though the construction sector of Ethiopia had been hit hard due to the Second World War, it supported the Allied powers. During the Second World War, the Ethiopians supported the Allied forces, so the country's progress seemed to halt. The Second World War, however, devastated the economy of the European powers. Therefore, to rebuild their nation from scratch, they took the support of minerals and other resources from Africa. Thus, after the Second World War, they were more focused on reshaping their nation; the countries of Africa, including Ethiopia, had been left in the desert (Cheng & Darsa, 2021). Businesses and industries came to a halt, including the CI. During that period, Ethiopia had witnessed a decline in almost all sectors, and until 1991, Ethiopia desperately needed a new economic policy to revive all its sectors, including the construction sector.

The new economic policy of 1991 was different as her government had emphasized the CI as one of Ethiopia's three critical economic development sectors. At that period, the state-run CI desperately needed a capital base, new and modern machinery, high-quality equipment, highly technically skilled individuals, and much experience (Adepoju et al., 2022). As a nation, Ethiopia needed more labor based on road construction and maintenance technologies, as described. Today, the construction sector of Ethiopia has improved a lot, and as of the year 2022, the market size of the CI of Ethiopia has become 54.8 billion USD (Globaldata, 2023). The critical construction sectors currently involved in Ethiopia are “commercial construction, industrial construction, infrastructure construction, energy utility construction, and the construction of residential places.”

As of the year 2022, there are a total of six different contractors that are operational in Ethiopia, including Web Build Spa, China Communication Construction Group Ltd, Larsen & Toubro, and CSCEC. Many consultants are well-versed in consulting about construction. Several construction consultants operate in Ethiopia, including China Railway Ltd. and Overseas Alliance Infrastructure Pvt ltd. Deltares, and Mannvit Engineering (Globaldata, 2023). These companies have focused on Ethiopia's key construction sectors, including taking up railway and hydropower projects and building construction for residential and infrastructure purposes. From the above analysis, it can be said that the construction sector started during the 17th and 18th centuries, while the modern CI began during the 20th century with the help of modern technologies and tools due to the Industrial Revolution (Alaloul et al., 2020). The trends remained more or less the same for Ethiopia, but it could not access modern tools and techniques developed by Europe's construction industries. Due to this, the pace of progress of the CI in the country was relatively slow and much slower during the Second World War. In 1991, reforms were made in the country, which included adopting new economic policies and aimed to review each sector, including the construction sector.

1.2. Policies and Strategies

Ethiopia's first viable reform to revive its economic sector was from 1991 to 2002. The Ethiopian government pledged to bring economic prosperity to the country after prolonged wars and a command economy. The restrictions imposed on the country's private players were lifted, and steps were taken to re-establish relations with other businesses worldwide. Ethiopia's industrial

and industrialization policy during 1991 included significant liberalization of the economy, deregulation reforms, and other reforms that benefited the country's economy.

1.2.1. Reforms in the Years 1991-2002

Import liberalization: Ethiopia is dependent on foreign entities for the resources required by the CI, which includes raw materials, skilled human resources, modern machinery, advanced tools, and investments (Gebrehiwot, 2019).

Removal of subsidies and export tax: The export tax was reduced, so the products and services manufactured in the country were exported to other destinations (Archibong et al., 2021). This policy has helped the nation build strong trade relations with other countries.

New investment code for labor and public enterprises: The laborers who work for the private and public entities of Ethiopia adopted different labor codes, and hence, the 1991 reforms made it possible to liberalize the labor codes and create a comfortable environment for foreign workers (Jiru, 2020).

Complete transition to private property ownership: Earlier, during the period after the year 1974, when Ethiopia was under the rule of Military Junta, the economic policy in the country was inspired by socialism (UNCTAD, 2021). Hence, land ownership and business were mainly under the state, which was the biggest challenge for the company as the government continuously interfered with ordinary people's business matters. For the infrastructural development of residential areas, private ownership is required. Thus, these reforms helped private entities own and develop their property based on their considerations.

1.2.2. Development Period Reforms 2003-2018

1.2.2.1. Growth and Transportation Plan-1: 2011-2015

The first GTP designed by Ethiopia's government was spread from 2011 to 2015. The emphasis of this GTP-1 was heavily on the embarking of the massive industrial developmental

program. This program has laid the foundation for the construction of infrastructure, which includes the making of new and advanced gauge railway lines in the country, the construction of dams on the Nile River for hydro-power generation, the construction of roads in both the rural and the urban regions of Ethiopia, and construction of industrial parks in Addis Ababa (UNCTAD, 2021). These development projects were expected to create jobs in the country, ultimately bringing more investment to reach its peak development. The GTP Ethiopia's main aim is to sustain the growth and deepen the country's economic growth and structural transformation.

1.2.2.2. Growth and Transportation Plan-2: 2016-2020

Ethiopia's second GTP, which started in 2016, was a bold target compared to the previous one. The main objective for the second GTP of the country was to achieve all the goals that were desired to be completed during the first GTP, which were in the form of construction projects, infrastructure projects, and developmental projects (Nitsche, 2021). The second GTP has shown its greater emphasis on the productive work of all construction projects, which were associated with the construction of roads, the construction of residential places, the construction of hydropower dams in the Blue Nile River, and the construction of bridges and flyovers in the country (UNCTAD, 2021). From the above analysis, the second GTP underlined Ethiopia's dynamic domestic infrastructure development with the help of FDIs received in the country's construction sector.

1.2.2.3. Industrial Development Roadmap: 2013-2025

The Ethiopian economy is low compared to Western economies, as its nominal GDP is 155.8 billion USD as of 2023. The GDP value of the country was 11.29 billion USD in 1988, and it is projected to meet the 297.97 billion USD mark by 2028 (UNCTAD, 2021). These figures are evidence that the economy of Ethiopia is expected to grow further in the future as well. If the economic progress does not seem to grow as expected, then the responsibility will come on the shoulders of that country's infrastructure. In 2013, Ethiopia restructured a long vision road map to develop its industrial sectors and transform the nation through industrialization. The road map developed by Ethiopia in 2013 includes building the infrastructure for boosting manufacturing in the country and developing the existing system for boosted technological development.

1.2.3. Major Industrial Policies

The government of Ethiopia adopted significant industrial policies to meet the country's aims and objectives. The things included per the industrial policy include FDIs, export promotion, development of industrial sites, and technological development. When it comes to the construction industries of Ethiopia, technological development and the development of sites remain the most important (UNCTAD, 2021).

1.2.3.1. Technological Development

As mentioned earlier, Ethiopia is a middle-income developing nation whose nominal GDP is expected to surpass the 200 billion USD market in 2028 (UNCTAD, 2021). Technologically, its ranking of Ethiopia is way behind all the nations worldwide. If the ranking of the global innovation index is accessed, the ranking of Ethiopia was 126th (Dutta et al., 2020). The world is progressing technologically daily, and new technologies and tools are being introduced in the construction sector. These days' technological tools like “AI, Digital Twins, blockchain technology, and virtual and augmented reality” are used exclusively by the construction industries around the world. On the other hand, Ethiopia is making its best effort to cope with those technological developments, but it will require much time and investment.

1.2.3.2. Development of Industrial Sites

For a very long period, Ethiopia has adopted a cost-saving approach to the industrial development process (Elahi et al., 2022). Later, Ethiopia realized that the approach needed to be changed to create a new, creative, and conducive environment. It had to develop several developmental corridors. It also had to create several industrial parks where foreign businesses could invest. Ethiopia still needed to catch up to the world-class infrastructure that helped the country create a coordinated industrial sector whose main objective was simplifying industrial operations.

The steps taken by the government of Ethiopia regarding the industrial and construction development reforms showed that the Ethiopian economy had grown by 9% in the financial year

2018-19, with the industrial sector growing by 12.6%. The construction subsector was growing by 15 %, which was remarkable, but more needs to be done for Ethiopia (UNCTAD, 2021).

1.3. Capacities Building of Local Contractors and the Challenges in Developing CI of Ethiopia

Several factors have been affecting the construction sector of Ethiopia, including difficulties in financing the projects by the contractors, ineffective planning of the project, resource management, and payment delays. Hence, capacity building for local contractors involves providing proper finances without delay, managing resources, and hiring skilled workers (Mengistu & Mahesh, 2020). Financing the projects is one of the biggest concerns of the ECI. For that purpose, the US government is engaging with local Ethiopian contractors to provide them with finances for various mega infrastructure projects. In 2016, the EXIM Bank of the United States approved the finances for Ethiopian businesses, especially those engaged in construction projects (ITA, 2022).

In 2018, the Millennium Challenge Corporation approved the threshold program for approving all the pending projects in Ethiopia. Most of the local contracting companies in Ethiopia are private, which is why delayed cash payments and inadequate financial support end the source of income for the local contractors. The International Finance Corporation of the World Bank provides equity support for Ethiopia's private contractors. Construction has also flourished in Ethiopia's power sector of Ethiopia where the work is carried out in three distinct areas: energy generation, transmission, and distribution of these projects. If the top 5 largest construction projects are analyzed, it would be found that Addis Ababa International Airport is the largest construction project, followed by the Wabe River Bridge projects, then Siyo–Shenen-Guder Road Development, Gode-Hargele: Lot 2 Road Project and Haik - Bitsma - Chifra (woreda) Road Project.

The construction projects of the International Airport of Ethiopia are generally captured and carried out by international contractors as they have better infrastructural support and better financial support (Tokody et al., 2023). Due to this, the local contractor finds getting any tender in the country challenging. Most of the local contractors have to compromise themselves by taking

on road construction projects in Ethiopia. Focusing on the road construction projects, the total value of most road construction projects is less than 65 million USD compared to the Addis Ababa airport project, which was around 4000 million USD (Globaldata, (2023). The challenges that the local contractors of Ethiopia face need to be analyzed first for capacity building. The challenges they face include a lack of governance, a lack of political stability in the country, corruption in the government structure at every level, heavy interference of the government in setting the price, and finally, a lack of PPP models in Ethiopia.

1.3.1. Providing Appropriate Governance

The biggest issue is the need for more governance in the projects based on the construction sector from the government side. Likewise, in any civilized country like Europe, for any construction project, there is a proper, well-defined framework that needs to be followed by the government first, then the bidding parties who take part in the bidding process of tenders (Ayele et al., 2021). The governance includes the proper analysis of the period required to complete a particular project and analysis of the minimum possible and maximum possible cost of an infrastructure project. The safety of the workers and the common is a shared priority for the government and the construction company.

Seeking environmental concern is yet another factor that is included in almost every construction project. As per Statista, the total carbon emission due to the construction sector was around 2926.5 million metric tonnes in the year 1970, reaching 3421.6 million metric tonnes in the year 2022 globally (Tiseo, 2023)—the profitability factor in the CI depends mainly on the time that is required to finish a particular project. If the project is completed within the defined deadline, then there is a chance of profit, while if it is delayed, the chances are high for the construction company that will have to meet with heavy losses. The last and final step that comes under the governance framework of any government before announcing the tender of a construction project is the expertise and experience of the contractors (Ayele et al., 2021). For better growth and development of the local construction contract, the government framework needs to be rectified first so that the international constitution companies would not have the upper hand in the market of Ethiopia. Today, many construction projects are owned by Chinese construction companies or

any other foreign entity, which suppresses the local contractors of Ethiopia as they are not getting a level playing field in their own country.

1.3.2. Reducing the Interference of the Government in the Construction Businesses

Ethiopia is a federal parliamentary democracy where the head of the government is that country's Prime minister, and almost all the government's decisions are under the Prime Minister's direction (Bekana, 2023). On the other hand, Ethiopia's economy is neither a capitalist nor a socialist economy. Instead, it is a mixed economy (Melesse et al., 2021). The government is inviting private businesses to collaborate with the government in various companies. However, there are still several sectors where the government has excessive dominance in ownership and economic policies. Due to the mixed economy type, the government of Ethiopia tries to interfere in the business of almost all the sectors, like defining the prices of the products, setting the prices of construction tenders, and creating regulations for the projects.

Excessive interference from the government or the bureaucracy in the sector is not a good sign. It reduces the chances of the company or the industry growing independently as they have to complete the paperwork first. Ease of doing business rankings are an excellent parameter to determine how much a nation is favorable for carrying out business. The lesser the government's interference in the business, the better the ranking and ease of doing business, and vice versa. Ethiopia's ease of doing business ranking was 104 in 2011 out of 190 nations, which had become 159 out of 190 countries in 2020 (Galal, 2023). Ethiopia is becoming an unfavorable destination for businesses, and one of the reasons is the government's excessive interference in business. Hence, the capacity-building of the local contractors of Ethiopia needs to be assisted by the government rather than being a barrier to their progress.

1.3.3. Minimizing Corruption

Most of the countries of Africa indulge in corruption activities, and this is one of the reasons why most countries in Africa are underdeveloped. An index often used for better access to a country's corruption level is the Corruption Perception Index. As per the corruption perception index, the ranking of Ethiopia in the list of all the nations around the world is 94 out of 180 nations,

with an overall score of 38 out of 100 (Transparency International, 2022). If the corruption score is closer to 100, the country would have a higher rank; if the score is low, the country would have a lower rank. Corruption is like a virus that can damage the reputation and progress of any nation worldwide, whether it is the United States or Ethiopia. Corruption in the country helps to increase inflation as it reduces the commodities available in the market and increases their price (Uddin & Rahman, 2023).

Coming to the businesses, the worst and the most affected business here due to corruption is the local business, and the local contractors and the large and affluent business can use their influence and money to bribe the government to carry out their businesses in the market (Uddin & Rahman, 2023). Suppose any foreign multinational construction company bribes the government of a country. In that case, there is a high chance that the government would give them favor in the tenders that would be announced by the government rather than help the local contractor to become potentially strong enough to give tough competition in the global arena. Hence, the next step in building the capacity of the country's construction businesses is to reduce government corruption, starting from the lower to the top authority in the government's hierarchy.

1.3.4. Political Stability

As mentioned earlier, the ranking of Ethiopia in the ease of doing business is 159 out of 190 countries, and the reason behind it was the unstable political condition in the country (Galal, 2023). Politically, Ethiopia is one of the most unstable nations in Africa, where armed conflicts by rebels and militants are common. Humanitarian crises, conflicts between the security forces and the rebels, and human rights violations are straightforward things that symbolize that the country is politically unstable (Reuters, 2023). In 2022, the government of Ethiopia and the rebels of Tigray successfully signed a peace deal under which both parties agreed not to attack each other (Reuters, 2023). Nine months later, the deal saw a fresh attack in the Amhara region between the federal security forces and the rebels, which created immediate chaos in the area (Reuters, 2023).

Ethiopia is considered one of the largest countries in Africa and has a vast consumer population, so it carries a substantial geopolitical advantage in the Horn of Africa region (Reuters, 2023). Due to the continuous wars and drought situation in the country, thousands of innocent lives

have been lost, and several businesses have lost their space in Ethiopia, especially the construction business of the local contractors. Hence, for capacity building of the domestic contracts, the country has to become politically stable as violence halts the ongoing construction projects.

1.4. Need for Developing New Policies and Strategies

Policies and strategies are critical to business as they help increase compliance, improve internal processes, better navigate the company during a crisis, and enable a clear and consistent structure. Most of the time, the industry must develop new policies and strategies to mitigate the challenges the CI has faced in Ethiopia (Heggy et al., 2021). The most common challenges with the construction business, especially the domestic construction business, are poor governance framework of the government in the nation, poor financial and technical support by the government, especially for the small local contractors, skilled worker shortage due to lack of availability of engineering institutions for teaching about the modern construction processes.

From the part of the government, the challenges are even worse as the most common challenges which are involved here include the unstable situation of politics in the country, the excessive corruption in the government, the lack of a PPP model in the country, and mixed economic policies of the country (Jayasena et al., 2021). Due to these challenges, there is very little chance a government like this will work for the national interest; instead, it will work for its own interest. The best example is the recent offering of the Addis Ababa International Airport contract to the hands of Chinese contractors. This is the best example of how a corrupt government would try to favor foreign contractors, ignoring the concerns of local businesses and local contractors. To work in a political situation like this, construction industries operating in Ethiopia must develop new plans and strategies.

The PPP model is the PPP model, a model framework developed to deliver projects and services with the help of collaboration between private and government entities. In providing the PPP, there are various sub-models, like operation maintenance contracts, designing building financing and operational agreements, and operational licenses (Jayasuriya et al., 2019). In the construction sector, the PPP model is beneficial, especially for the local and small contractors who need help building partnerships with the large construction companies in the market. As no PPP

model is actively practiced in Ethiopia for the survival of the local contractors, they need to build new policies and strategies to find alternatives in the market.

Ethiopia's economic and construction opportunities are unique throughout the nation, as the government is politically unstable and continuously threatened by conflicts. These uncertain political and law and order situations create a vulnerable environment for the country's construction operations (Oyewo et al., 2021). This will delay the projects, and if the contractor extends the deadline, they will have a heavy economic burden. This is another reason construction companies operating in Ethiopia must develop new strategies and plans for future business there.

Almost all constituent companies, whether MNCs or local contractors face the challenge of finding more skilled workers. Having many qualified workers in the construction business has numerous advantages, including excellent chances to deliver complex construction projects. High-skilled workers in the CI help to work faster and enable them to provide more precise results (Sulaiman et al., 2021). Hence, construction companies need to develop new HR policies to manage sound and highly skilled workers in Ethiopia.

1.5. Problem Statement

The research topic focuses on maximizing the potential of the CI of Ethiopia, with a focus on local construction contractors. The country's construction projects have deteriorated, so the government has witnessed numerous failed projects. Several reasons have been discussed in the previous section for why the construction projects in the country fail to deliver outcomes in time. Poor governance, lack of construction infrastructure, lack of skilled workers, lack of clarity to the government regarding policy framing for the construction industry, political instability, and the high corruption rate in the country. Excessive interference of the government in daily business is yet another challenge that the local construction contractors must deal with, which often results in delays in project delivery and ultimately results in failed projects. All the above are the problems currently faced by the CI of Ethiopia, especially by the local construction contractors. This will be the center of discussion of this research study.

1.6. Aim, Scope, and Objective

This research is destined to understand how the potential of the local contractors of the CI of Ethiopia can be enhanced. In contrast, the center of the study is the failed construction projects.

- To provide an in-depth evaluation of the current landscape of local contractors in the ECI and identify critical factors influencing their potential for growth and success.
- To identify challenges and barriers local contractors face in maximizing their capacity.
- To evaluate the existing policies, regulations, and government interventions related to the ECI.
- To generate a standard procedure method/ criterion for analyzing best practices and success factors to aid policy and decision-making.
- To propose pragmatic strategies and interventions.
- To assess economic, political, and social impacts, and
- To provide a roadmap for implementation.

1.7. Significance of Study

Ethiopia is located in the “Horn of Africa,” and Ethiopia dominates this region due to its political status, economy, and country population. The growth and development of any nation’s infrastructure depend primarily on the stature of the nation's CI. This study will inform us about the past, present, and future of the CI of Ethiopia. This study will provide the current steps that the government of Ethiopia is taking to improve the country's construction sector. The country is underdeveloped; hence, most of the construction projects are either under development or planned to be started at any time. This study helps to get a clear understanding of the companies involved in delivering the projects based on construction, where it has been found that currently, the

majority of constitution projects are taken over by Chinese firms. Moreover, this study will help to understand the problems faced by CI of Ethiopia and how to maximize the potential of these local contractors in Ethiopia to become successful in the coming years.

1.8 Limitations of the Study

This study aims to analyze the potential of local construction contractors in Ethiopia and how their potential can be enhanced so that they do not end up failing construction projects. This research has focused on the challenges faced by the construction sector and the country's local contractors. The government's involvement in the CI has been conveyed, and the government's steps to improve the country's situation have also been covered. The possible solutions to all the problems discussed in this research have yet to be covered, and thus, it can be taken here as the limitation of this research study.

1.9 Structure of the Study



Figure 1: Structure of the Study

(Source: Self-developed)

1.10. Chapter Summary

This chapter has tried to provide a brief outline of the research topic based on the CI of Ethiopia and the maximization of the potential of the local contraction of the country, which is still under pressure. At first, the history and development of Ethiopia were convened later on, and the government adopted policies and strategies over some time. Later on, this chapter covered the capacity building of the local contractors and the challenges faced by the nation's construction induction. Aims and objectives follow the study's problem statement, the significance of the study, and the limitations of this research study.

CHAPTER 2: LITERATURE REVIEW

This chapter will deliver a short literary review of this research study. This has been divided into four parts, starting with the empirical literature review and ending with the theoretical review. In the empirical review, the research articles of the different research studies are described in terms of the methods used for data collection and the findings of the overall research analysis. In the “theoretical literature review,” the literature collected is based on creating different literature, which includes explaining specific concepts to clarify the understanding.

2.1. Empirical Review

As Sayidganiev et al. (2022) mentioned, the CI, by nature, is one of the riskiest industrial sectors with enormous challenges when implemented. This research study aimed to find the advantages and disadvantages of construction industries, and to meet the objectives, secondary data has been used. Every construction project is prepared to achieve the desired goals and objectives within a well-defined time. Most of the time, this time limit is not sustained long, which causes construction companies to face losses and, ultimately, the projects to fail. The key issues with today’s CI are the development of the CI, globalization, work culture, and the environment where it has been operating. There are a few countries across the globe that are taking action to make the constitution profitable, which includes Australia, Singapore, the UK, and Hong Kong. Hence, the overall research analysis found that corporate development is crucial for improving the overall CI.

As per Gamil and Alhagar (2020), the study was carried out to evaluate the construction business's consequences faced due to the pandemic in 2020, which was COVID-19. The researcher tried to answer this by collecting the data from primary and first-hand sources like exploratory interviews and surveys, and later on, it was analyzed with the help of IBM-SPSS. For this research analysis, it has been found that COVID-19 has resulted in the suspension of projects. The shortage and migration of workers was yet another result of the research survey. Delaying the construction projects, increasing the cost of the projects, and other financial impacts were the issues witnessed by the companies and the workers working for the construction firms. From this above analysis,

after the COVID-19 pandemic, optimistic steps are needed to improve the financial impact of the pandemic on construction businesses.

As Buniya et al. (2021) said, poor safety is the biggest problem in the CI, as workers are the most critical asset in the construction business. This research aims to understand the potential barriers to construction businesses' implementing safety programs. Research has tried to meet this with the help of “Semi-structured interviews” carried out by the construction experts and stakeholders. The above interview analysis found that 12 barriers have been appraised and divided into four dimensions: “non-conductive working climate, poor governance, poor safety awareness, and unsupportive norms of the companies.” Changing this scenario and offering a good and safe construction operation by the companies is suggested to improve the performance and safety of the CI.

As cited by Hossain et al. (2020), the concept of circular economy is becoming more and more popular day by day, and the reason behind this is the significance of the research being consumed in the sector based on construction practices. This thesis aims to understand the circular economy of the CI along with the existing trends, challenges, prospects, and constructions. The research tried to address this with the help of a systematic literature approach, using journal articles taken from Google Scholar. From this research analysis, it has been found that the challenges with the implementation of Circular economy concepts in the CI have specific challenges like “the challenges with the supply chain, the existing business models, risk and collaborations, and integration of the urban metabolism.”

As per Navaratnam et al. (2022), in Australia, the CI has employed more than 1.15 million workers, and during the COVID-19 pandemic, most of the construction workers have loosened their jobs. The total contribution of the Australian CI is around 8%, which was 33% before COVID-19 due to COVID-19, the restrictions imposed by the government of Australia on physical activities, due to which the construction workforce has been reduced significantly. The construction sector of Australia has suffered a lot, so the government of Australia decided to reverse changes to VAT tax for builder's grants and payments. During this challenging time, positive change and a rapid transition of technology and technological innovations were witnessed. From this, the prefabricated CI was suitable for sustainable construction during the crisis.

As Adekunle et al. (2022) mentioned, construction activities are the most dynamic and risky industries whose end outcomes are difficult to predict. It is considered a bad reputation due to “poor people management, poor information management, poor project delivery, and poor planning implementation.” It is due to the involvement of many external reasons for successful projects based on construction practices, which include pricing of the materials, labor pricing, the productivity of the workers, and the quality of information with which they are working. This researcher tried to discuss information management in CM and also figure out the importance of information management for the CI. By systematic analysis, it was found that the advantages that the CI receives from information management include “the growth of the firm, betterment in its organizational performance, enhanced market value, and increased service quality.”

As cited by Assaad et al. (2020), the project's performance in the CI, where the cost of an industrial project, the schedule of an industrial project, and overruns are the focus of this research study. The researcher has collected the data for this research with the help of a survey of 63 construction experts on 25 distinct performance risks. The data collected was analyzed with the help of mathematical and statistical techniques. By studying this research article, it can be established that a distinct model framework must be followed for better performance management in the CI.

As mentioned by Yap et al. (2021), delays in the CI are familiar, sometimes resulting in the overall failure of projects based on construction. The primary objective of this research has been addressed here by researchers who performed a meta-analysis with the help of 20 highly cited literature reviews based on clients, contractors, consultants, labor and equipment, and materials. The researcher also collected data from surveys of 148 participants, most of whom were construction practitioners, consultants, and contractors. From the overall analysis of this research study, if all the mentioned principal managerial capabilities are appropriately managed, then there is a high possibility that the CI will deliver the project on time.

As per Bolton et al. (2022), the CI of the United Kingdom has been suffering from late payment issues, and most of the subcontractors are raising their voices against the companies for the late payment issue. The research has tried to raise these issues through this research with the help of a collection of primary data with the help of surveys on 21 subcontractors and studying a

total of 30 construction projects. In the survey, around 77% of subcontractors said they faced challenges with late payments, while 46% revealed that they had received half payment. The findings of this research study have shown that regulator and contractual measures have been implemented to address the issues with delayed payment. The late payment will further raise concerns about subcontracts, and they will need help managing the cash flow of a project.

As Ab Rani et al. (2021) mentioned, local contractors in any nation face tremendous challenges in any part of the world, and this has arisen due to globalization and liberalization. The researcher tried to address the challenges that are fancied by the local contractors in the existing market due to domestic and foreign competition. The data collection process used for this research is primary data, with the help of a survey of 60 participants from Malaysian International contractors. Later, the collected data was analyzed with the help of the RASCH model. Three challenges have been identified: “stiff local competition, building reputation challenges, unstable economic situations.” Each of these issues limits the growth projection of local contractors in Malaysia.

According to Osabutey et al. (2014), the CI of Ghana has been studied in this research article, aiming to analyze the potential for technology and knowledge transfers between local firms and foreign companies. FDI is considered one of the most significant factors for maintaining cash flow in any business and industry. Researchers have tried to address this issue by collecting empirical data from semi-structured interviews. Later on, this collected data has been analyzed with the help of descriptive analysis. From the data analysis findings, the local construction enterprise of Ghana lacks in various segments that include modern techniques, technological advancements, and poor infrastructure. The potential of Ghana's construction firms is good and can reach its peak, but due to a lack of technological and knowledge transfers, they need help in the market.

As per Rahman et al. (2014), collaboration is essential for any group project as it helps to achieve the desired goal with collective effort. The research aims to analyze the importance of cooperation in the CI from the point of view of a contractor. For this, the researcher collected the data from the primary source by surveying 160 participants. These participants have participated in the National Forum of Malaysian Malay Contractors 2011. The research analysis identified six

factors: "collaboration, encouraging teamwork, improvement of timely and quality project completion, and overall enhancement of service quality." Apart from this, several items have been discovered, including stimulation of information sharing and building better communication among the project and team members.

As cited by Ametepey et al. (2015), a new concept developed worldwide is carrying out construction activities sustainably, also known as sustainable construction. The researcher aimed to address the barriers to successfully implementing construction with the help of sustainability in the Ghana CI. For this research study, the data was collected through the primary data collection method with the help of structured interviews with 18 selected contractors and 16 consultants. A survey was also carried out, and here, the focus was 100 randomly selected architects, structural engineers, and quantity surveyors. From the analysis of the collected data, the identified barriers were "management, political, technical, socio-cultural, financial, and knowledge barriers."

As cited by Ho (2016), this research study aims to understand the shortage of workers, especially the skilled workers in the CI of Hong Kong. The research used the primary data for this study, with the total number of participants being 2,900 and the total number of questions being around 438. The researcher used the grounded theory approach to develop labor supply theory in the methods section. From the overall research analysis, three strategies have been identified: increasing the wages of the construction workers, importing foreign workers through work visas, and engaging the existing workers in training and development so that they would feel more secure for their future. The solutions found are enforceable but are challenging to implement in Hong Kong. Other than Hong Kong, where the government is democratic and the market is free, it can easily be used to implement the given solutions.

As Latiffi et al. (2013) mentioned, the BIM (BIM) is a set of digital tools that can be used to manage effectiveness in the CI. This research article has tried to address the application of BIM in the CI of Malaysia with the help of secondary data sources. This application model has been implemented in many countries like the UK, Australia, and Hong Kong. From the data analysis, the application of BIM has been defined in three distinct stages, starting with the pre-construction stage, which is the initial phase. Next is the post-construction stage, which follows the construction stage and later on. In the pre-stage, BIM can be implemented in existing modeling, planning, and

other processes. BIM can be implemented in the construction stage, and it can be implemented in the post-construction stage, where the operations facilities are managed.

As per Fulford & Standing (2014), construction industries are one of the world's most unproductive sectors. In this research study, the researcher has tried to address the CI's productivity and the potential for collaborative practices. The data collection method used is case analysis with the help of the opinions of subcontractors. The overall analysis has brought out four primary conclusions, including the CI's lack of strength in the relationship, the design process's engineering and life cycling cost, procedures and information that need to be standardized, and emphasis on adding PM activities. IT evolutions have occurred in various sectors, and the world has witnessed their impact. Hence, there is an immense requirement for IT technological implications in the construction sector.

As mentioned by Prabhu and Ambika (2013), production efficiency has been one of the burning issues in the construction sector. In this research, the researcher studied the workers' behavior in the CI to improve production efficiency. Regarding the construction sector, productivity relies on the laborers' performance, time-bound targets, cost analysis, work pressure handling, safety measures management, and quality management. To carry out this research study, the data was collected through primary sources with the help of a survey, and the collected data was analyzed with the help of Microsoft Excel or SPSS. Around 34% of the contractual laborers are satisfied with the conditions in campaigns, and around 40% think their supervisors do not care about human lives. It has been found that those workers who work under good working conditions and with proper wages feel comfortable in the organization and are productive.

According to Ogunsanya et al. (2022), this research study has focused on the application of procurement sustainably in construction projects. The application has specific barriers for which the Nigerian CI has been unable to implement sustainable procurement. The data collection methodology chosen for the study includes primary sources, which were collected through surveys. In the survey, a total of 320 surveys were tested, and among them, 19 were tested. From the analysis, local contractors faced specific challenges, such as improving the "knowledge of sustainability, ensuring transparency, and good governance." The research analysis has revealed that the Nigerian CI has to answer several challenging questions regarding the implication of

sustainability knowledge. The responsibility for the enhancement comes on the shoulders of both Nigeria's construction companies and the Nigerian government.

As per Belay et al. (2017), major success factors in the CI generally lead to the company's success. The Ethiopian economy is developing, and like most developing nations, it faces challenges to the success of projects based on construction activities. The data was collected through surveys, desk reviews, and interviews. One hundred twenty questions were distributed among “7 contractors, four clients, five consultants, and two other companies”. From the overall study, it has been found that decision-making effectiveness needs to be developed for the success of a management project. The project delivery system needs to be rectified, as well as others. Among all these, the success factor can be enhanced if the construction contractors can make their decisions accordingly.

As cited by Bajjou & Chafi (2018), Lean construction offers innovative practices for managing projects based on construction while reducing wastage and performance boosting. The researcher aims to address this with the help of a quantitative methodological approach through a survey with the collection of 330 individuals who have taken part in the research survey. Around 61% of the individuals in the survey were familiar with Lean construction practices, which positively impacted quality and safety. From the research analysis, the challenges that act as barriers for CI include inefficient knowledge of lean construction practices. Unskilled workers and insufficient finances were other challenges identified in the thesis study. In this discussion, the center of the study is the Morocco CI, and the challenge that has been defined is only for the CI of Morocco. The trends and challenges can differ for other countries, as each has challenges and opportunities.

As cited by Chemir (2018), project risk management is the first step to maximizing the chances for the success of any project. Risk management practices involve identifying the risk, analyzing it, responding to it, making a strategy, and monitoring the risk. The research study has analyzed the risk management of the construction sector in Ethiopia by Chinese contractors through their company CSCEC and China Wang Yi. The research has collected the data with the help of a primary data collection process, surveys, and semi-structured interviews. The questions were distributed among 30 participants, and the collected data was quantitative. The research

results revealed that risk management practices are moderately applied to the sample projects. It has also shown that past experiences are vital for developing a plan for risk management and carrying out risk management practices.

As Lauria (2023) mentioned, the research study has tried to discuss the Chinese financing of infrastructure projects in Ethiopia, and the agency is fully engaged in this process by the Chinese. In Ethiopia's infrastructure projects and construction sector, two actors are state and non-state actors. When it comes to state actors, it is the government of Ethiopia, and when it comes to non-state actors, the biggest investor in the Ethiopian construction business is China. The data used for this research study is secondary data, which has been analyzed descriptively. This research analysis found that when it comes to the Ethiopian construction market, there are four sets of actors: federal actors, bureaucrats, local businesses, owners, and local workers.

As per Giannecchini and Taylor (2018), in the year 2000, China showed its agreement to share its vision and experiences with the African nations for their infrastructural development. In this research analysis, the main focus of the researcher is the eastern industrial zone in Ethiopia and how it is acting as a catalyst for the development of the whole nation. The data was collected from secondary sources and further analyzed with the help of thematic analysis. The study shows that extending the country's Chinese and Chinese construction businesses is geared towards promoting the Eastern industry zone, where the main focus is Ethiopia. China had invited more African countries under the SEZ model for their country's infrastructure and industrial development.

As per Fango (2019), in Ethiopia, the federal democratic republic covers "1.113 million" square km of territory. The population is over 100 million, and the GDP is "\$550" per person. Ethiopia's pattern and geography of settlement, economic activity, and transport play an essential role in economic development. This study aims to understand and relate the restrictions to local contractors in bidding on projects for road construction. The study also found the difficulties experienced by the local constructors while bidding on road development projects in "ICB (ICB)." The study also helps determine the extent of the difficulties that impacted the local contractors in their contracting business. The overall findings of this study highlight the problems the Ethiopian

local contractor experienced when local bidders encountered the process of the road bidding construction project of ICB.

As mentioned by Kedir et al. (2022), IC helps to grow the demand to develop the economy. This study aims to investigate IC adoption using a suitable method and scope. This study also focused on overcoming housing challenges in practice and covering the current knowledge around IC. The research used a qualitative method and converted it into a quantitative method to understand the research on the built and housing environment. The overall result of this study shows that the most vital accelerators come from the government for IC adoption and deal with investing in construction in the future and constructing new products. This research helps to understand plan adoption accelerated by IC. It is also highlighted that it is crucial to analyze the influencing factors; this research explores a formative scenario based on expert and literature methods.

According to the perception of Abdi & Bayu (2021), the sources of fund choice to finance investment activities and an organization's operation are some of the essential activities the manager has decided on. This research mainly focuses on analyzing and examining the effect of capital structure on companies' profitability in Ethiopian construction. This study used a secondary quantitative method to collect the information and data. The collected data is selected for constructed companies limited to ten years. This research is also determined to increase the number of Ethiopian construction companies; moreover, it examines the company's assets and size that can impact profit. The findings of this research indicate that asset return and asset tangibility have an important impact on the construction companies' financial performance in Ethiopia; apart from that, the research findings also show that company size and "long-term debt ratio" have a significant impact on the Ethiopian construction company's profit. The overall result of this research indicates that "Agency theory" is the most relevant theory in the construction companies of Ethiopia.

As said by Waqar et al. (2023), the application of "BIMing (BIM)" in the construction project evaluates opportunities for making an effective decision on the project lifecycle. BIM allows design and construction teams to extend their technological infrastructure. It has been understood from this research that the application of BMI in checking and examining the

performances throughout the project is essential apart from that BIM application. It allows construction managers to make accurate and quick decisions based on complex inputs. The motive of this research is to offer a theoretical framework that highlights the difficulties of implementing the processes of BIM. The findings of this research highlighted that the construction expert's experience with practice about “BIM, behavioral barriers, implementation hurdles, and barriers of technical adoption and management barriers were analytical for BIM adoption.”

As per Ferede (2020), significant risk impacts the construction project development with consideration to time, cost, and quality. The size of the construction project extends the capability and capacity to change all the development that changes into the results of “focal component counteracting undesirable.” The purpose of this research is to examine and analyze effective risk management. This study of the CI of Ethiopia served decision-makers regarding the importance of risk management in the Ethiopian government to implement in the CI. This research used primary and secondary sources to gather all the relevant information about managing the risk of CI in Ethiopia. The research objectives include the complexities of managing risk that can improve the survey cost of risk management and examine the impact of managing risk in the development industry of Ethiopia. The overall result of this research shows that unsuccessful innovation was the vital difficulty of risk management and risk management in the CI.

As mentioned by Yadeta (2019), CM is a vital process to achieve or gain the objectives of all projects in terms of “cost, time, and quality.” The Ethiopian construction projects are highly fraught and complex with variability. This research shows that construction projects always raise risks and are unique from several sources of numbers. This research paper examines the critical risks related to construction projects that affect the performance of projects during the lifecycle of projects in Ethiopia. This research conducted interviews and a survey to select the managing risk in the project based on construction in Ethiopia. This research was developed based on variable identification. It has been identified from several factors of this research that the key risk factors have a distinct impact on the performance of projects based on construction that are classified and identified. The overall result of this research shows that most of the risks and challenges are from the CI and management of Ethiopia.

According to Hassen (2021), construction project success depends on the frame of time control, planned budget, project completion, and the quality of the construction project. The Ethiopian government has remarkably accomplished and developed in several sectors of construction projects compared to past decades. The mixed method was used in this research study; surveys and interviews gathered primary data, and secondary data was collected from the reports and documents of the authorities of the Ethiopian government. The findings of this research show that improvements in effective communication, employee training, and practical building of project teams are the factors that impact construction project quality. This research also highlights that the construction project accepted by the government of Ethiopia is mainly designed and has the scope to change the area of the project.

As per Abebe & Desalegn (2019), in Ethiopia, road construction infrastructures can be traced back to the 19th century when imported and loyal families used cars, and road construction developed quickly. This study aims to identify the “supply chain participant’s integration” for the performance of chain management in constructing private roads in Ethiopia. This study also set the role of sharing information between the supply chain participants on the performances of the constructors of private roads in Ethiopia. This study has also identified the material flow and its effect on the overall supply chain management performance. This research also identified the role of participants' relationship with management on Ethiopia's “private road constructors” supply chain performance. To achieve the objectives, this research mainly used primary data. The overall findings of this research revealed that the sharing of transportation information and supply chain participants are proven factors for contractors on private roads in Ethiopia.

As Ajayi et al. (2019) mentioned, increasing the social criteria is used in the procurement of construction, where the employment of social criteria is related to the groups. The issues of mitigating unemployment and social exclusion have become more used in the CI. This research aims to analyze and examine the limitations of the requirement of social procurement employment in supply chain construction. This research explores the limitation of employment that experiences disadvantages by a range of construction groups and is targeted by social procuring policies. This research revealed that it is essential to understand the difficulties involved in “social procurement implementation.” It is also highlighted by this research that reducing the risk is essential to running

the social procurement policy in Ethiopia, and the CI is capable of practicing to serve and increase the requirements of complex employment.

As per Debelo and Weldegebriel (2022), the resources of several transforms are constructed, and social infrastructure and physical economics are essential for socio-economic development. CI is the most vital factor in other industries. This study refers to the planning, procuring, processing, producing, constructing, maintaining, repairing, and deconstructing of physical infrastructure. The primary purpose of this research is to examine how the main constructor is used to select a sub-constructor. This study also analyses the impact of the relationship of the primary constructor and subcontractor on the construction projects' performance. This paper used a descriptive survey to identify the underlying characteristics that affect the relevance between primary and sub-constructors and the effect of their relationship on the performance of construction projects. The findings of this paper revealed that most of the leading constructors depend on the sub-constructors for their work and execution, and the performances of the project construction effectively impact the subcontractors' management and procurement.

As Wubet et al. (2023) said, the Ethiopian government has been working to increase the capability of domestic constructors in Ethiopia during the last three decades. The government of Ethiopia enables the development of various public and private construction firms. The main motive of this paper is to prioritize and analyze the risk of “Ethiopian domestic construction (EDC)” in operating the project road construction. Through the literature review of this research paper, 47 risk events were highlighted. This study surveyed the professionals to identify the risk terms of road construction projects. The result of this study outlined the important risk events such as “inadequate planning, cash shortage, lack of investment of foreign currency, frequent equipment breakdown, material delivery delay, and more within the team of constructors.”

As Kesto and Tsega (2022) mentioned, road construction and infrastructure are Ethiopia's most critical and essential economic growth drivers. Coincidentally, it is widely analyzed and acknowledged that the domestic road CI is unsuitable for the role of a driver in Ethiopia's economic growth. The main motive of this research is to create a comparative analysis of the performances of foreign and domestic contractors in road construction in Ethiopia in terms of time, quality, and

cost. This paper used a review of documents, a “semi-structured interview,” and a “FGD (FGD)” to meet the aims of this paper as a tool for data collection. Based on the overview of this paper, the result shows that domestic contractors are not so capable of being competitive in terms of time and cost overrun and quality of the domestic contractors' performance.

According to Ayalew et al. (2016), lean construction has improved performances in emerging and developed countries, especially Ethiopia. This research evaluates Ethiopian lean construction's awareness level, barriers, and potential opportunities. This study has analyzed the fact that some awareness levels of complex lean construction need to be experienced and practiced by the CI of Ethiopia. The study used a mixed method to meet the objectives of this paper. The overview of this paper highlights that the potential opportunities expected from lawn construction implementation include greater productivity, enhanced waste/sustainable reduction, reduced high-quality construction and project schedule, and customer satisfaction. Along with this, the most influential awaited to implement lean construction, “lack of industry support” and insufficient support towards the lawn construction project.

As per Ahady et al. (2017), construction industries have become a more critical player in developing the economy in any country, especially in developed countries. Construction project success is mainly related to timely completion with perfect environment and quality and within the accurate budget. This paper has identified that cost overruns are the most common issue in several construction industries, mostly in developing countries such as Ethiopia. The primary purpose of this study is to identify the impact of cost overruns on construction projects. The study used a mixed method to meet the objective of this paper. This paper's findings revealed that several factors impact the cost overruns project of the CI in Ethiopia. Increasing the price of materials and fluctuation are the most vital factors that continue the CI's cost overruns in developing countries.

According to Sahlu & Dinku (2021), In Ethiopia, the CI has improved sustainability during the past two years. This paper mainly focused on the site activities of construction categories based on the lean concept. This concept involves a column framework and cast concrete for the slab. In this study, it has been identified that reducing the waste of the lean approach requires introducing new production management. The result of this research highlighted that the construction companies observed the construction site only in physical terms and invested huge attention in

generating waste materials. In Ethiopia, non-physical wastes are generated at the construction site, such as unnecessary transportation, waiting time, defective works, and excessive movement, which are non-valuable activities added by lean construction.

According to Dachasa (2022), the requirement for construction worldwide is increasing effectively. The CI has increased in the last 30 years compared to 2000. The main motive of this research is to estimate the vital factors that influence road construction implementation. The research paper conducted a survey and interview method to meet the purpose of this paper. The study of this research indicates that the vital factors are in the category based on the failure and equipment availability, the experience of the designers, precise specification, appropriate design, construction material supply, and more. Based on the result and discussion of this paper, the factors influencing the road construction project are considered as a tool of instrumental in helping to complete the project successfully. The implementation and the theories of stakeholders effectively manage the equipment and materials of the construction.

According to the perception of Assaad and El-adaway (2021), the productivity of the CI determines the performance of the predominant. However, the CI provides vast data on overall construction productivity compared to labor productivity. Thai research aims to identify the model that impacts variable workplace and workforce on the CI's productivity. This research also examines the practical relevance of several factors in the workforce and workplace to the CI's productivity. The research paper shows the complex gap in terms of productivity in the CI. The research work mainly concentrates on productivity and labor productivity. Based on the result of this paper, it has been concluded that the productivity of gross construction effectively justifies the importance of implementation in the CI.

As per Yohannes Hailu et al. (2023), most developing countries, such as Ethiopia, have significantly contributed to the construction of the economy with the help of infrastructure. The primary purpose of this research is to identify the reason for the project's delay in construction in Ethiopia's public universities. The study was conducted as a “cross-sectional survey” using a quantitative method to meet the objectives of this paper. The paper examined the delay project factors and models to collect data from clients, contractors, and consultants. The data used in this research were identified through “SmartPLS4 software”. This research shows that contractors,

clients, materials, and consultants are affected by delayed projects. The overall delay in construction is an external factor that significantly impacts the project delay. The findings of this research focus on the potential aspects of construction that may occur in the present and future projects.

According to the perception of Al Balkhy et al. (2021), for the last few years, lean construction has achieved good management for the construction project and enabled the application of that revolution in the CI. This paper aims to examine the limitations of adopting lean construction. The survey and questions were included in this paper to meet the objectives of this paper. This research's findings revealed how to improve the knowledge about lean construction and help to support the adoption of new techniques that can improve the CI's performance.

As mentioned by Shen (2015), private Chinese investment in China is regarded as the investment that the government of China makes to offer unique opportunities in Africa. Currently, investments are being made by the private sector of China in the manufacturing industry in parts of Africa. The data collection methodology chosen for this research is secondary sources, and it has been analyzed with the help of descriptive analysis. The data was collected in three distinct areas: data on the home country, data collected from host nations of Africa, and feedback from different countries. It has been found that all the six host nations mentioned in the research have reported a record increase in Chinese investment projects. Data from the country reveals that Chinese investment occupies the manufacturing industries of Africa. In contrast, the investment is lower in mining and extracting the minerals resources with only a tiny percentage.

As per Jarkas & Haupt (2015), this research aimed to analyze the major risk factors in Qatar's CI. The researcher collected the data from primary sources through surveys, and the questions were divided into 37 risk factors. The collected data has been further analyzed with the help of statistical analysis or graphical analysis. From the research, it has been found that the risk that has been indicated as the most critical is the client group, then the risk related to the consultant, then the contractors, and then the risk factors associated with the exogenous group. The findings of this research show that most of the risks analyzed are practical and can easily be included in the board members' policy decisions.

According to Mahamid (2014), this research aims to study the construction projects and building project challenges in the West Bank region of Palestine. To carry out this research study, the researcher collected data from primary sources with the help of a structured survey. The survey was formed with the help of factor identification, with the total number of factors including forty. The factors identified in this research were cost estimating, construction items, construction parties, finances, and environment. The research findings have suggested how the government can support making regulations to meet the needs of the construction markets. It can help the owners plan and draft the policy framework for a particular research project. The West Bank region is underdeveloped and placed in one of the world's most vulnerable regions. Hence, to mitigate all these challenges regarding the construction activities in the West Bank region, the construction schedule will be carried out precisely, and day-to-day activities will be conducted.

As Kidanu (2014) mentioned, this research has focused on studying the impact of ISO 9001 certification on the construction industries in Ethiopia. The methodology for this research has been divided into data collection and analysis. The data collection part was done with the help of a survey based on the literature review. Apart from carrying out the survey, the following method that has been chosen for the data collection for this research analysis is an interview of all the construction contractors of Ethiopia who are ISO-certified. The findings have revealed several factors responsible for the failure of construction companies in Ethiopia, including lack of efficiency in the work process, lack of effectiveness, inadequate training and development, and lack of motivation among the CI of Ethiopia.

As cited by Shiferaw and Klakegg (2013), public services are consistent in almost all nations worldwide, so public investment projects are brought into the limelight. Private construction is different from public construction; public projects come with many internal complexities like paperwork, bureaucracy, changes in the government, and lack of funds for the government. This research study aims to discuss the housing development projects in Ethiopia and their accomplishments, shortfalls, and lessons that can be learned from them. The data has been collected here from secondary literary sources, and quantitative and qualitative evidence have been considered for this research analysis. From this research analysis, the researcher has brought up the idea that housing projects could be more efficient, effective, relevant, and sustainable for the

Ethiopian market. The significant pitfalls for the failure of housing projects in Ethiopia include the cultural practices of construction contractors in Ethiopia.

As per Wells (2013), corruption and collusion are the two distinct items worldwide that have been affecting the construction sector for a long time. There are countries worldwide where the CI has been facing challenges, including those encountered in developed nations and those faced in developing nations. Countries like Ethiopia are developing nations, and unlike any developing nation, the most critical challenges they face include inappropriate projects, high prices, poor quality of products, excessive time, and lower returns from construction projects. China is globally known as the construction powerhouse, and instead of this, the construction business has been flourishing not only in the domestic market but also in the international market. The cause of the failure of public construction projects in African nations includes high levels of corruption due to a lack of transparency from the government and companies.

As Gebreeyesus (2013) mentioned, this research article has tried to cover Ethiopia's industrial policy and development, and the choices, implementation, and outcomes of the industrial policy are described in this research article. Secondary sources have been enacted for the data collection process, and most of the data has been collected from literary sources and the government websites of Ethiopia. The research studies the different regimes in the industrial policy of Ethiopia, the Imperial period, the Dergue regime, and the EPRDF regime in pre-1974, 1975-1991, and post-1992, respectively. During the first regime, the guiding vision of the Ethiopian government was market oriented. In contrast, the Dergue regime shifted towards the command economy, and finally, the EPRDF regime became market-oriented yet again. The role of the government in industrial development and management has been shifted over the different regimes. In the imperial regime, the role of the government was infrastructure and HRD over selective industries. In the next stage, it shifted towards the government's ownership.

2.2. Theoretical review

2.2.1. Lean construction theory

Lean theory was first implemented in manufacturing, but in recent times, the work and knowledge of lean can be implemented in various sectors. The lean construction theory helps in project delivery by maximizing the stakeholder value and reducing the wastage of collaborations between the team and the team projects (Li et al., 2020). The lean theory in construction aims to bring productivity, increase profitability, and increase innovation trends in an industry. This study has identified the challenges currently faced by the CI of Ethiopia: reduced productivity and increased debt of the local contractors. Hence, suggesting the ways by which companies can address the challenges of lower productivity and lower profitability can be explained very well with the help of Lean theory.

In lean construction, five principles include mapping the value “stream, creating flow, establishing pull, pursuing perfection, and defining the value.” All five principles have been arranged in a way that collectively helps an organization to create more effective and efficient results. It also helps the organization to make it more and more competitive in the market, which is required for Ethiopian construction contractors. Lean construction theory also helps reduce the business's cost, which is the biggest concern for all construction industries (Li et al., 2020). The CI has been struggling to increase its profitability worldwide, which has become one of its biggest concerns. This is why if lean construction is adopted appropriately, there is a high chance that profitability will increase.



Figure 2: Lean principles

(Source: Li et al. 2020)

2.2.2. Agency Theory

Agency theory, or the principal-agent theory, is the theoretical framework that views a firm as a bunch of contracts between interested individuals and stakeholders. This theory can explain and resolve the principal and agent issues (Vitolla et al., 2020). The principal here is the stakeholders who have invested their money in the organization, while the agents are the management body of the organization. This theory generally addresses the risk arising in two areas: the difference in the goals and the difference in the risk aversion. This can be understood with the help of an example, like if a company's management has a vision of getting short-term gain and has to invest the shareholder's money towards a short-term basis on a project to get high returns (Vitolla et al., 2020). This generally will create chaos among all the investors as their money is invested at huge risk without their consent.

The research aimed to identify the risks and challenges that the local contractors in Ethiopia face. Local contractors must work collaboratively with multinational and large companies, which

raises the possibility of a clash between the two distinct organizations. Apart from this, risk management is considered the most important, and hence, for risk administration in the CI, the best theory to be implemented would be agency theory (Vitolla et al., 2020). Differences in goals or objectives regarding a project and differences in risk aversion are the two most common issues in the CI that can be addressed with the help of agency theory. If the work is being carried out in both these sectors, then only the success of any construction project is possible.

2.2.3. Taylor Theory

Taylor's theory or Taylor's motivation theory is the theory that says that money is the main force that drives the workforce to work vigorously for the company or the organization. This can be implemented in any of the business or industrial sectors, and in this discussion, this theory will be implemented in the CI (Bardach & Klassen, 2021). As mentioned in the earlier parts, the most critical asset of the construction sector is its labor and overall workforce, which are involved in the lower-level work of the professionals involved in the management level work. Most of the laborers working in the CI have to face numerous challenges, which include underpaid and lousy working conditions.

Low wages are often considered one of the biggest concerns. Maximizing the potential of the local contractors in Ethiopia includes bringing up the conditions of the CI. This is why the best way to motivate the labor and workers of the CI is to increase the wages and improve the poor working conditions of the construction workers (Bardach & Klassen, 2021). This research study aimed to identify the challenges of construction in Ethiopia and the concerns about low wages and motivation in the CI of Ethiopia. Hence, the significance of high wages and high workforce motivation can be understood with the help of Taylor's theory.

2.2.4. Waterfall PM Theory

The CI worldwide is considered one of the riskiest projects as the chances of success are less. The waterfall PM theory can adequately manage any construction project. This theory has five stages: initiation, planning, procurement, construction, and closeout (Battoia, 2019). The first step is the initiation, where, for any construction project, the stakeholders initiate the project. The

next stage is the planning stage, and in this stage, project managers of the construction draw a plan that defines the way a project will start, and then it will end the cost that will be required and the total time that will be taken to complete the project. After the planning, the next stage is the procurement stage, and here, the necessary raw materials and the items required for the construction activity are procured. After procuring all the necessary items, the next stage is construction, where the actual construction work will be performed. After the completion of the construction, all the necessary items will be explored, and finally, the building will be closed. The research has emphasized the understanding of failed construction projects. With the help of this theory, it can be easily understood how to carry out a construction project effectively and efficiently in a country like Ethiopia.

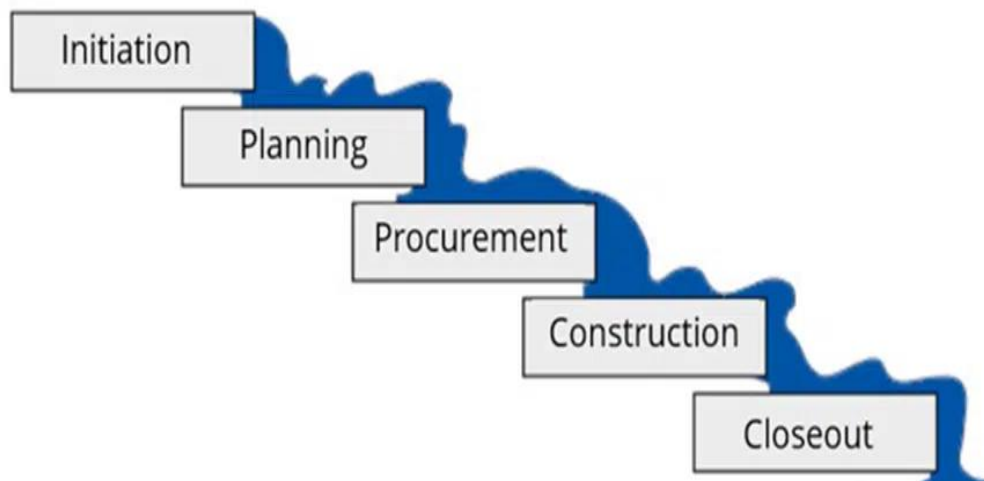


Figure 3: Waterfall PM model

(Source: Battoia, 2019)

2.3. Gap in Literature

The literature gap of a study is a section termed as those areas of a study that are unexplored and explored in the literature review section. This section of the literature review covers two types: empirical literature review and theoretical literature review. In the empirical review, 48 journal articles were taken, each taken within the last five years. Each of those articles is based on challenges faced by the CI worldwide and how those challenges are relevant to the Ethiopian

context. Much of the literature is based on the conditions and potential of local contractors in construction and CI in Ethiopia. There are works of literature based on failed construction projects and about studying those ways that fail a project.

Failure in construction is a global phenomenon, so most articles are not specific to a single country. Instead, it has been spread across the globe. Instead, there were some shortcomings in the literature data collection, including the lack of literary sources based on Ethiopia, especially in the construction sector. Few kinds of literature have expressed literary views, but the numbers are pretty low compared to worldwide. Hence, from the above analysis, it can be said that the lack of literature on the ECI is the literature gap in this research study.

2.4. Conceptual Framework and Hypothesis Development

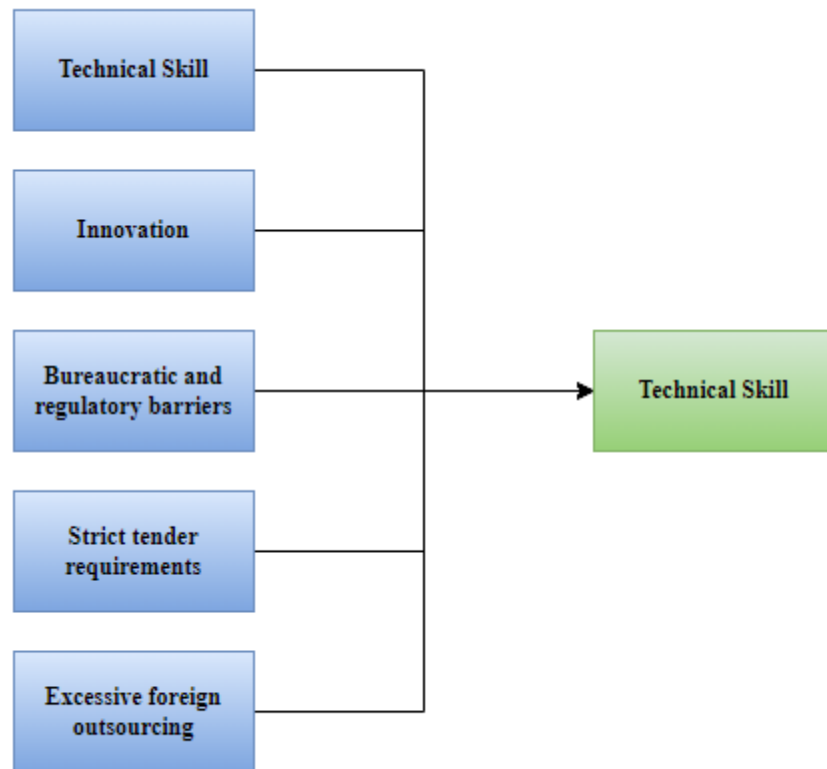


Figure 4: Conceptual framework

(Source: Self-developed)

H1: A lack of technical skills can hinder local contractors' capacity in the CI.

Technical knowledge is vital for increasing capacity. According to Kyivska et al. (2021), information about technology is vital for the CI. In other terms, technical skills are necessary for construction leaders. Hence, this hypothesis is justified in this context. Construction firm owners need to focus on this area.

H2: Innovation is essential for maximizing the capacity of the construction contractors.

Innovation is another vital concept linked to the CI. According to Akinosho et al. (2020), innovation helps predict electric consumption rates. This is useful for identifying the operational cost of construction activities and reducing power wastage. Hence, it helps increase the capacity of construction firms, further justifying the second hypothesis.

H3: Bureaucratic and regulatory barriers delay the growth and expansion of construction contractors.

Regulatory and bureaucratic barriers are another obstacle for construction firms. According to Briguglio et al. (2021), general contractors have addressed bureaucracy and obstructive policies as core issues. This means that these factors can create obstacles for them. These can also cause delays during the expansion and growth of construction contractors. This justifies the choice of H3 in this context.

H4: Strict tender requirements can create issues in maximizing the capacity of the construction contractors.

Strict tender requirements are another major challenge for construction contractors. It can delay their growth and expansion process. According to Bohari et al. (2021), tender price is often considered a significant issue. In other words, a construction contractor can face issues fulfilling

tender requirements with tight budgets. It can also cause him to face issues during expansion. It also supports the formation of H4.

H5: Excessive foreign outsourcing can create issues for local construction contractors.

Foreign outsourcing is another vital factor. It can influence the growth of domestic construction firms. Forte and Ribeiro (2020) state that offshoring activities can lead to unemployment in home countries. This means issues related to job loss can occur after foreign outsourcing. It can also cause barriers to occur during the development process. A similar concept is also applicable to the CI. Hence, H5 is justified here.

2.5. Chapter Summary

This chapter aims to provide a brief and concise discussion of the literature review of the research topic. The findings of the empirical review revealed many things about the potential of local contractors, the CI, the reason for the CI's failure, and the way the CI is adapting to the surrounding challenges. ***Local contractors*** in the CI are primarily native to a particular region and have fewer spheres to show their performance. They are facing immense challenges in the market worldwide, such as heavy competition from domestic players and tussle between foreign construction players. The potential for the growth of these local contractors is high in any market, especially a developing market like Ethiopia. However, due to high market competition, the government's excessive interference in the daily construction business has made their operations a nightmare.

The CI as a whole was also explored in the literature, where it had been found that it is the CI that is responsible for bringing tourism to a country, it is the CI that brings investments in a country, and it is the construction activities that provide necessary infrastructural support to the businesses. The literary sources have also shown that developing its capital, Addis Ababa, as a city is possible only due to the efficient CI. However, it has also highlighted that construction activities are sorted into some areas in Ethiopia. The developmental projects are not spread across the country. ***Reason for the failure of construction projects: Construction projects are the riskiest projects to implement as the margin of error is less***, and there is a high possibility that the project

will not be completed in time. With the help of literature sources, the reason behind the failure of the construction projects was explored, which includes low wages, lack of skills, lack of motivation, lack of planning, lack of resource management, and lack of cooperation and collaboration among the stakeholders.

Changes in the CI; as the research aims were not about understanding the changes that can be witnessed in the CI only a few remarks have been given in which the inclusion of IT technology in construction has been addressed as the best technological application that will help to fill the gap of communication. All the literature has been taken based on the research topic and the aims and objectives of this research study. Taking inspiration from the literature and literary sources, the appropriate methods will be selected to execute this research study to understand how the potential of local contractors in construction can be addressed and increased so that the failure of construction projects can be minimized. Overall, this literature review will help to understand the conceptual and theoretical study of Ethiopia's CI, and with these, appropriate methods can be chosen in the next chapter.

CHAPTER 3: METHODOLOGY

The methodology chapter in the dissertation gives a chance to analyze all the strategies and techniques effectively. The systematic plan is developed with investigation and proper evaluation of the subject matter. This chapter gives a detailed approach to the study through the development and assurance of validity and reliability. Based on the subject, the previous study can ensure an understanding of strategies that can be applied in the section. A standard development is made correctly and will surely draw an effective conclusion. This research perfectly addresses reliable and valid results by applying effective strategies. The aim and objectives have also been justified through the proper administration of the study.

3.1. Research Philosophy

Research philosophy is the most essential part of the research study and necessary for the methodology part. Research philosophy is necessary to frame the research study, and various research philosophies are used in the research, such as positivist, Interpretivist, pragmatism, and realistic research philosophy (Williamson, 2021). Positivism is a philosophy based on the knowledge of the neutral observation of the activity. Positivism philosophy is a philosophy that depends on the activity and the observations of the activity. A neutral observation is needed for the positivist philosophy and the incidents that are the problem for society, and measuring the problem, there should be an observation and a neutral judgment about the problem, and the application of the philosophy gives positive outcomes about the issues (Kiringo and audio, 2020). Positivism research philosophy is a popular philosophy for scientific research and considers the subject's explanation and prediction. This philosophy helps the researchers to evaluate the study scientifically and in a logical way that helps them to evaluate the problem.

Interpretivism is a philosophy that contrasts positivism. This philosophy believes social incidents have mixed perspectives, so the researchers used the research with experience (Park et al., 2020). The researchers in this philosophy use their subjective view to observe a problem. Understanding people's mixed perceptions is based on human experiences and interaction. The interview-type research study is an example of a qualitative research study. This present study is based on interviews and surveys, which is why the study uses both primary qualitative and

quantitative data. Pragmatism is another philosophy used in the studies and is an approach to operational decisions. Several principles are involved in this philosophy, such as the importance of actionable knowledge and recognition of the interconnections between action, experience, and knowledge (Kaushik & Walsh, 2019). This philosophy is the same as positivism.

Another research philosophy used in the research study is realism philosophy, which is also based on ideology and scientific philosophy. In this philosophy, the issues are solved scientifically and logically, giving the research a realistic nature. This philosophy is based on the truth that consists of the issues that are the subject of the research. Considering all the philosophies and the criteria of the philosophy, it has been concluded that interpretivism is the suitable philosophy to use in evaluating the subject. This study is based on Ethiopia's CI and the project's failed implementation. This issue is a social issue and is based on the CI. When evaluating the problem and framing the research study, it is essential to apply the interpretivist philosophy to make the research successful. Evaluating the approach of the study of positivism philosophy also can be applied to the study to recognize the interconnections between action, experience, and knowledge.

3.2. Research Design

Research design is the most essential part of the methodology. Research design is the necessary action that is important for the study to construct the research with the collected data. Two types of research design are popular and mainly used in studies: qualitative and quantitative. The quantitative design comprises descriptive and experimental types (Sileyew, 2019). A descriptive design is a design that helps the researchers evaluate the study with a descriptive nature, and an experimental research design helps the researchers to make correlations, comparative studies, and experimental research. The nature of the quantitative research design indicates correlations and comparisons with a numerical and statistical approach. The outcomes of this type of research are numerical and statistical. This research study is based on scenario surveys and is evaluated with quantitative tools and software to give a proper statistical outcome.

Qualitative design is based on open-ended questions that the researchers set. This design is based on the interviews and the perceptions of the participants involved in the interview. Five

types of qualitative research designs are grounded theory, ethnography, narrative research, historical, case studies, and phenomenology (Tomaszewski & Zarestky, 2020). This present study is based on the primary data and the data collected by the surveys and interviews. Surveys consist of quantitative research and the data collected from the surveys. This study is based on issues in the CI and needs to be researched to evaluate the issues and causes. That is the reason the study needs the survey based on the scenario. A quantitative study is the most important for this issue in order to overview the study and the scenario.

The interviews with the selected participants are part of a qualitative study that is also needed to understand the internal scenario of the CI. The CI in Ethiopia is suffering from a lack of potential for constructors, which is an issue for the whole system. To evaluate the issues and examine the scenario, it is necessary to apply both research designs, which will help the study to be nicely framed. This study has a chance for descriptive analysis, and correlation and comparison are necessary. This present study is based on the organizations and industries of Ethiopia. The CI is lacking and implementing the failed project. This problem is the organizational problem, and to evaluate the problem, researchers should frame the study with both a descriptive and comparative nature. The interview session is equally important in understanding the participants' perceptions on this issue.

3.3. Research Approach

Research approaches are another part of the studies necessary for framing the study. The research approach collects, analyzes, and interprets the data. Various types of research approaches are used in the studies. Three research approaches are famous for the study: "inductive, deductive, and abductive" (Mehrad & Zangeneh, 2019). These approaches are the most used in the study. The inductive research study is based on data observations, and the observation is necessary for developing the theory. It is used to reform the study and make new theories and hypotheses. The rule of inductive research study is that it begins with observations and ends with new hypotheses and theories. There is a difference between the inductive and deductive research study.

The inductive research study starts with the observations and ends with the newly developed hypothesis and theory. A deductive research study starts with the new theories and ends

with the observations. Inductive reasoning uses a specific set of data. The data set is based on experience and helps make an observation. The inductive research approach helps to evaluate past experiences, is used to help make decisions about the issues, and can help to innovate new theories (Polat, 2022). A deductive approach to study is a study that starts with the specific hypothesis and theory and ends with the observations. The deductive approach is used to develop the theory, is applied in quantitative research, and is used to develop the hypothesis. The deductive method goes from general to particular areas. This process starts with a broader area and focuses on a particular area. The deductive method directly goes into the matter and helps to evaluate the issues (Grincheko & Shchapova, 2020). The deductive approach is used to evaluate the study with the help of theories to relate the scenario with the theories. In the deductive approach of the study, there is a first premise and a second premise, which is a common form of the deductive approach that gives the outcomes with logical conclusions.

An abductive research study starts with surprising facts, and the research process explains the facts. Abduction is mainly the process of discovering new concepts by explaining surprising phenomena. The pre-existing data cannot explain the data of events. This study approach helps the researchers implement new ideas and concepts by explaining surprising facts (Hurley & Dietrich, 2021). This is similar to the grounded theory that is related to the generation of new concepts. Decision-making and daily decision-making are the best examples of the abductive study approach. The abductive approach is a part of the qualitative study used to cultivate the surprising findings in sociological theories. Considering the study scenario, the abductive approach is the most suitable. The present study regarding the CI issues is a surprising fact that has to be evaluated and implemented in new concepts.

3.4. Population

Researchers often acquire information from the survey population. This is a practical aspect from which some insights are gained to ensure the consistency of the study. Delmastro and Zamariola (2020) have addressed the importance of population in a study. The population is referred to as the smaller portion of a large population. This section highlights the entire population in the statistics, which should be well-designed. The estimated population parameters in this study were determined through accurate investigation and the ability to observe the central phenomena.

In this study, the population is represented as the people, maintaining the study's significant accuracy. In other words, the population helped gather accurate data for the study.

The importance of the target population is unavoidable in this study. The target population is essential for depicting the aim and objective of the study. It is crucial to select a particular population group for a survey. It can be helpful for the data collection process. From the viewpoint of Miliias and Psyllidis (2021), the population is split into several smaller categories or categories based on one or more characteristics important to the research. The research population was selected effectively. They were selected from the Ethiopian local contractor's group in the construction sector. Hence, this study's primary target group is the population, such as contractors, policymakers, and consultants.

3.5. Sampling

The sampling is referred to as the selection of a particular group. This method helps collect necessary data in primary research. As Rahman et al. (2022) mentioned, the sampling method impacts creativity and effectiveness regarding maintaining proper representation when selecting participants from the subset. Sampling in statistics lets researchers evaluate an assumption on the population's attributes. A researcher needs to select a population with a proper sampling method. The selected population needs to represent the characteristics of the larger group of people. There are two types of sampling presses: "probability sampling" and "non-probability sampling." The "probability sampling" is the formation of statistical solid initiation. Random selection is also stated through this sampling method.

According to Pace (2021), probability sampling can be of various types, including stratified sampling, simple random sampling, and purposive sampling. In this study, "simple random sampling" was selected as this sampling method helps form a better approach in scientific work. This process is also helpful for randomly selecting a population. In other words, it minimizes the chances of selection bias. This assists in obtaining the proper information about the ability of Ethiopian Local contractors within the CI.

3.5.1. Sampling Criteria

Observing the phenomena and deciding to develop better work is essential for the sampling criteria. From the viewpoint of Ames, Glenton, Lewin (2019), the criteria of sampling processes are conducted through the sampling work, sampling error, sampling size, and main bias, frame of the sampling, and cost and main period of the study. The working category can be modified by observing the entire study without obstacles. The primary sampling criterion in this study has impacted the findings and description of the scientific method. The main criteria of the sampling are to select all the participants in the Ethiopian Local Contractors in the CI. According to the sampling criteria, contractors, policy-makers, and consultants were selected for the survey.

A specific essential requirement must be identified and articulated. From the perspective of Hiebl (2023), this sampling criterion must be systematically reviewed and studied with a process known as requirement sampling. The goal of sampling according to criteria is to find the main areas where the framework needs to be improved. In order to choose a group of people, variables such as age, gender, socioeconomic intervals, and diagnoses relevant to the study issue are frequently used. The primary group should be a perfect range of policymakers, contractors who belong to the local community, and consultants. These are the practical criteria for the study formation, which also required the proper size of sampling raiding the category participants, which should be **103**. These participants belong to local groups, such as policy-makers, contractors, and consultants.

3.5.2. Sample and Size

Sampling size is determined by selecting sampling criteria and processes, which leads to a significant selection of information based on the study. The sampling size is adequate to highlight the quantitative study as this has proceeded with the aim of a standard presentation. As per Serdar, Cihan, Yücel, and Serdar (2021), the sample size is the number of observations, indigent, or participants, which should be included in the study for further measurement and analysis. This usually succeeds as “n” and potentially affects the statistical aspects. The sample size in this study for purchasing the capability for all contractors in the industry can be 103. The larger sample size

of this study is vital as it can influence the research findings. It can enhance the quality of the survey and the quality of the study.

It is crucial to select a proper number of populations. It can help a researcher to conduct a study with utmost efficiency. Similar approaches were used in this study. Adequate population can help conduct data analysis or collect necessary data. This study was conducted using both qualitative and quantitative methods. Hence, in both methods, the researcher collected the information by selecting 103 participants for the survey and 14 contractors, government officials, industry experts, and other types of construction professionals in this study for the interview. The information has created an action within the matter of study, which may evaluate the potential issue in the contractor's industry.

3.6. Instruments

A research instrument is a technique for gathering, measuring, and analyzing information related to the interests of the principal researcher. As per the opinion of Sileyew (2019), the data collection method usually uses proper instruments or tools. The research instruments are used in various types, such as questionnaires, observation forms, interview techniques, tally sheets, and surveys and tests. In this study, a questionnaire was developed based on primary quantitative strategies. The quantitative design in this section has been developed with the collection of primary information.

The quantitative method was analyzed with insights based on using the Likert scale while collecting the primary data. The Likert scale is an effective tool in the primary quantitative study. From the viewpoint of Jebb, Ng, and Tay (2021), a Likert scale is an assessment tool used to evaluate opinions, views, and behaviors in a quantifiable manner. It consists of at least four inquiries, which evaluate an individual attitude or characteristic whenever respondent values are added together. The Likert scale has been used with a range of more than four. In the Likert scale, (1=strongly disagree, two=Disagree, 3=slightly disagree, four=neither disagree, five= slightly, six=Agree, 7=strongly agree). This range has produced better results in this study, which may depict better results through individual responses. The questionnaire design in this section was developed using close-ended questions. These responses have attended better approaches in this

action; the major findings have been perfectly resolved within the Excel sheet, which makes sense about the quantities of responses.

3.6.1. Questionnaire

A questionnaire is a set of inquiries designed to gather valuable participant data. It is also a form of research instrument. According to Ahmad et al. (2019), the process of creating the structure and questions for the polling tool that will be used for collecting data regarding a particular occurrence is known as questionnaire design. The aforementioned instruments have an interview-style structure and contain spoken and written questions. Questionnaires are efficient for gathering data quickly through an extensive number of respondents. Therefore, ensuring that the instrument is designed accurately to collect information that can be interpreted and generalized is crucial. This questionnaire design may create effective action within the understanding of the CI's failure.

The questionnaire design in this study is divided into three sections: one is developed to ask the question of the constructor, one for policymakers, and the other for local consultants. As Story and Tait (2019) mentioned, survey research may use various data collection methods, most commonly questionnaires and interviews. The questionnaire design has been selected to construct the primary data collection processes. The interview participants were also chosen based on their detailed knowledge. Each section of the questionnaire has been depicted with 13 questions. The Likert scale was used to collect the information for this study. The Likert scale has the adequate capability to justify every statement in which they agree and disagree. The disagree option has depicted the adverse effects of the statement. Apart from this, the agree option has been highlighted as a positive action for the statement. The questionnaire design has been developed with demographic and subject-related questions, which are described below:

1. The current capacity of local contractors in Ethiopia is sufficient and reliable to handle large-scale construction projects.
2. There are challenges in maximizing the capacity of local contractors in Ethiopia.

3. The Ethiopian government provides adequate support, facilities, and resources to enhance the capacity of local contractors.
4. The lack of specific technical skills or expertise in the ECI hinders local contractor's capacity.
5. Technology and innovation can play a significant role in maximizing the capacity of local contractors in Ethiopia.
6. Excessive foreign outsourcing of contractors is projected further to harm the capacity of local contractors in Ethiopia.
7. Access to financing for local contractors in Ethiopia is adequate to support capacity maximization.
8. Success stories and best practices from other countries and industries could be applied to the ECI to enhance the capacity of local contractors.

3.6.2. Interview

The interview is also a tool in the primary data collection technique, and this tool is effective for the qualitative method. As Saarijärvi and Bratt (2021) mentioned, the interview technique helps to gain practical knowledge in detailed form, which verifies the objective through exact action in the work. The interview technique was used in this study for data collection. Some questions were developed in open-ended form. Some interview questions used in this section are described below:

1. In your experience, how would you rate the overall capacity of local contractors in the ECI?
2. In your opinion, what are the specific areas of weaknesses or limitations in the capacity of local contractors in Ethiopia?

3. How do you perceive the present capacity of local contractors to contribute to the overall growth and development of the ECI?

4. What steps should be taken to enhance local contractors' technical skills and knowledge in the ECI?

This study used the interview tool to standardize the primary qualitative method and the SPSS tool to highlight the statistical analysis. According to Lemenkova (2019), the IBM SPSS tool is an effective tool that taps information through modern applications, algorithms, and standard measurement. This tool has been applied to conduct quantitative analysis and has given standard results with proper justification of the main objectives.

3.7. Data Collection Procedure

The process by which the data is gathered through observations and measurements based on the given research topic. For carrying out a research study, it is crucial to collect the data appropriately; otherwise, it becomes challenging to meet the aims and objectives of the research. Data collection in a research study helps understand the “actual trends, practices, patterns, and relationships” (Alam, 2021). Choosing the data collection for any research depends mainly upon the nature of the topic and the aim of the research topic. The research topic is based on the CI in Ethiopia and its local contractors and the maximization of the capacity of those local contractors in the Ethiopian Construction market.

The topic here requires understanding the perception of the local contractors based on the ECI and the workers who have been working in the ECI. Hence, The data collection will be required here based on exploring current capacity, challenges, training needs, and the prospective factors affecting the local contractors. Various methods can be adopted for the collection of data, but the two methods that are widely used around the world are primary and secondary. Primary data are those sorts of data that a researcher collects through first-hand sources, and they are collected for practical experience (Dreyer et al., 2019). There are numerous ways by which first-hand data can be gathered, such as carrying out surveys on a population group.

Using interviews with a group of people is yet another way by which first-hand data can be gathered. Meanwhile, the other ways by which first-hand data can be gathered include carrying out live experiments and studying the behaviors of a specific group for some time. The following process of collecting the data is second-hand sourced data or secondary data. Second-hand data are those sorts of data collected from sources where the data was collected by someone else at any particular time in the past. This includes the research surveys published by “governments, NGOs, intergovernmental organizations, and extrajudicial and extra-constitutional bodies” (Jo & Gebru, 2020). The data from specific companies on their official websites is also considered second-hand whenever the research topic is based on a specific company.

Journal articles published by researchers on various platforms, especially Google Scholar, are also taken as second-hand sourced data (Spurlock Je, 2020). Some methods collect second-hand sourced data for data analysis. In this research, the data collection method chosen per the requirements is primary data collection. The methods that have been adopted for the collection of first-hand data include surveys and interviews.

A research survey is the process of seeking the perception of a population by offering them a list of questions. A research survey helps to understand the perception of a set of audiences. The survey concept was first used in London and was performed by the Statistical Society of London in 1838 (Hilts, 1978). It was for the first time a research questionnaire was prepared, and based on that questionnaire, responses were taken from a set of populations of humans. Other researchers have suggested that a public survey was first carried out in the United States in 1790, popularly known as the National Census, and has been practiced to date (Anderson, 2015). Understanding these historical significance and research surveys has been chosen here for the collection of first-hand sourced data.

Earlier, when the technology was not as advanced as today, human carried out surveys by physically asking questions from door to door and recording their responses on paper. Many things have changed, and the world has become technologically advanced. The survey methods that are widely used today include “online surveys, phone surveys, kiosk surveys, and surveys through online polls” (Nayak & Narayan, 2019). The survey method chosen here is the online survey method due to its low cost and time. Other than cost and time, there are other advantages, including

access to more precise data, quick analysis opportunities, and styling and framing of the questionnaire, which is easy to carry out and more accurate due to technological usage. The online survey for this research will be carried out with the help of a questionnaire survey, and responses will be analyzed later based on the chosen data analysis method.

Sampling is the most important criterion by which the population group is selected for collecting first-hand sourced data. In research surveys, there are numerous ways by which the sampling can be carried out, but it largely depends upon the outcomes of the results. There are five distinct ways sampling can be carried out: "simple random sampling methods, systematic sampling, purposive sampling, and cluster sampling methods" (Yadav et al., 2019). Here in this research survey, the sampling method that has been chosen is simple random sampling. Simple random sampling is the process in which a researcher randomly selects a population group. The selected population is based on a specified age group, gender, and work experience in a particular field. In this research, the population that will be selected will be mostly the local construction contractors and other CI personnel based in Ethiopia.

The sample size in a research survey is the set of populations selected for collecting responses based on the random sampling method (Lakens, 2022). It is suggested that the larger the sample size of a research survey, the better the quality of the survey. The large sample size reduces the chances of research bias and leaves no room for inaccurate research studies. The sample size for this research survey on the local construction contractors of Ethiopia will be 400, and they will be chosen randomly.

The interview is a structured conversation between individuals, where one is the participant and the interviewer. The role of the interviewer is to ask questions, while the role of participants is to provide adequate answers to those questions. Today, the interview is used in various domains like seeking "employment opportunities, understanding the psychology of a person, the purpose of the market, and in academics, journalism, and the media industry" (Jentoft& Olsen, 2019). Along with all those purposes, the interview is also used for research. Today, the interview has become an essential part of almost all job selection processes, especially when getting selected for higher positions. In employment opportunities, interviews generally help to understand the individual's perception, the selected individual's personality, and the participants' skill set.

Meanwhile, there are advantages to interviewing for research purposes as well. An interview for research purposes helps to examine the participants' knowledge in depth. Research interviews help better understand the individual behaviors and experiences of a set of populations.

The research topic here is based on local contractors in Ethiopia's CI; hence, the most experienced local contractor would be best for conducting interviews. Unlike the sampling in a survey, the sampling will also be carried out here in this discussion, and in this discussion, the sampling method that will be used will be purposive. The purposive sampling method is the kind of sampling method in which a set of populations is selected for a survey or interview for a specific population group (Campbell et al., 2020). As for the interview purpose, the group of individuals that will be required would be based on local experienced construction contractors in Ethiopia. The questionnaire for the interview would be different from that of the survey as it is being carried out to meet other objectives of this research study. As most interviews are qualitative, this research interview will be used. The sample size is the next important thing after sampling the population; the total strength estimated here is expected to be 10.

The interview questions will include keywords like the local contractors' capacity and the ECI's challenges. It also seeks their opinion on the role played by the government in the upliftment of local contractors in Ethiopia. Whether or not the local contractors are getting any assistance from the government will be crucial to understanding the official stand of the government of Ethiopia on this issue. As the sampling method that has been chosen here is purposive sampling, the participants that will be selected should possess specific qualifications. They should be stakeholders of the CI, they can be experienced industrial experts, they can be senior government officials, and they can be well-experienced construction professionals based in Ethiopia. Hence, from the above analysis, it can be concluded that a survey has been chosen to collect primary quantitative data. In contrast, an interview has been selected to collect primary qualitative data.

3.8. Plan for Data Analysis

Data analysis and its planning are an essential part of the study. Data is so important that it helps evaluate the study and reach a conclusion. There are two data types: "primary data and secondary data." The secondary data are acquired from existing sources, including articles,

journals, newspapers, and many more recorded. The primary data is “qualitative and quantitative” (Mishra et al., 2019). Evaluating the present study, it has been considered that there is a need for primary data. The study has used both qualitative and quantitative data to identify appropriate findings. The study needs planning for the data analysis to analyze the collected data. Quantitative analysis has helped analyze the primary data's scenario and environment.

After the data collection, there should be a plan for the data analysis. It is known that “quantitative data analysis” gives statistical and numerical outcomes that effectively enhance the research's relevance. At the same time, the qualitative analysis gives the descriptive type outcomes. For analyzing quantitative data, statistical tools were used to evaluate the different variables and their relations. “IBM SPSS” is software that helps to evaluate quantitative data with statistical analysis. The statistical analysis consists of “correlation, regression, ANOVA, descriptive statistics, reliability analysis, and bar graph analysis.” It is known that the “SPSS” is used for the numerical and statistical evaluation of the primary data. Correlation is one of the most important statistical measures identifying the relationship between two closely related variables.

It is necessary to find the relationship between the two variables, and correlation has three categories: positive linear correlation, negative linear correlation, and no correlation. Correlation is the crucial part that is required to measure the relations between the variables. Regression is another statistical analysis that showcases the relationship among the variables in a quantitative form. It can be used to prove the hypothesis between the variables (Li et al., 2022). The appropriate regression example can be discussed in that age and height correlate, and the height depends on the age, which is the linear regression example.

ANOVA is one of the parts of quantitative research and a statistical test used to make the difference between two or more groups. Two types of ANOVA are “one-way ANOVA and two-way ANOVA.” One-way ANOVA is used to make the difference between the one independent variable, and two-way ANOVA is used to make the differences between the two independent variables (Gamez & Palmero, 2020). ANOVA is used to analyze the variance, and the F ratio is the ratio of two mean square values. ANOVA is the most essential part that the researchers use to evaluate the quantitative data. This test is done between the two groups, and the groups and the

between variance is much bigger than the within variance, which is the significance of this test. After the test and the analysis, it has to be interpreted descriptively.

Interpretation is the most crucial part, and it helps to discuss the findings from the tests and analyze quantitative data. It helps to identify the patterns and the relationships in a descriptive way. There are four major descriptive statistics: frequency and central tendency measures. Measures of dispersion, measures of position, and this descriptive interpretation help the researchers understand the variables' variances and correlations (Mishra et al., 2019). The descriptive statistics include the mean, median, and mode values. Descriptive statistics include the standard deviation variance and range. There are two types of statistics: descriptive statistics and inferential statistics. Reliability analysis is one of the critical analyses done with the primary data. This is also a statistical measurement and refers to the measurement's consistency. The reliability of the test and analysis is the central aspect of any research, and the researchers must maintain it. However, there is reliability, and the outcomes are still not the same for any case.

Another analysis is bar graph analysis, and graphical representation is the most accurate presentation of the scenario. A graphical representation of the scenario is helpful for all the participants and the employees of the organizations to understand the scenario more effectively. Bar graphs are the perfect way to represent the value analyzed with the software. An analysis of the bar was done by comparing its values and height. It is used to understand the proportion of the subcategories. It is known that the graphical presentation of the information is the most suitable presentation of the information that all can understand. Vertical and horizontal bars could represent the different pieces of information that help understand the information and variances (Peng et al., 2020). On the other hand, there is a chance of qualitative data collection, and the data collected by the interviews from the participants that are selected for the interviews.

Significant qualitative data helps acquire information about the internal problems of the organizations and the ECI. That is why qualitative data is required for the study to gain information from the participants. The interview is the most crucial session, providing participants' perceptions (Pessoa et al., 2019). An interview session is such a session that has the significance of developing the values and the different opinions of the participants. This analysis is based on non-numerical studies, and this type of data analysis is descriptive. The present study has a space for the interview

session based on a set of questions, which will be answered by the participants selected for the interview session. The answers that are acquired from the participants will be interpreted descriptively.

The descriptive nature of the study will give the interpretation of the values and the perceptions of the participants involved in the interview. The interview session is the most valuable section of this study and the study that helps to gain qualitative data. This process involves developing concepts with descriptive data that help to understand the observations, which are essential to interpreting the data (Mace et al., 2021). That is why the observations are the most essential part of the study. The researchers should observe the scenario, make the findings from the experience, and mix them with the participants' perceptions. There are various examples of qualitative data, such as a closer look at the interviews, online reviews, website recordings, and other data sources. The five qualitative data analysis methods are narrative, phenomenological, grounded theory, and case study. These are the main parts of the qualitative study. The narrative is based on the individual experience and sequence, and phenomenological is based on the experiences of the participants who are experienced with the phenomena. This is the central part of the study.

The phenomenal study is an integral part of this study, and the study's topic and the interview participants are experiencing the phenomena, which will be reflected in the interview session. That is why a phenomenal study is required for the present study. This topic is based on the lack of potential in Ethiopia's CI. The people involved in the CI and experience the phenomena and issues they experience are needed for the study. Grounded theory is essential to qualitative data (Turner & Austin, 2021). This part aims to ground a theory after explaining the scenario. Data and the perceptions acquired from the interviews form the basis for grounding a theory. The case study also has its importance in discussing the organization. The organization's scenario is the most essential part of the study and for the qualitative data analysis.

There are three methods of qualitative analysis: participant observations, in-depth interviews, and focus groups. Participant observations are the most essential part of the study, and they are required to gain knowledge about the whole scenario and the participants' perceptions.

Observations of the participants are necessary for the current study. Interviews are equally important, and the study needs interviews with a set of questions to drive the interview session.

3.8. Validity and Reliability

Reliability refers to the repeatability of a measurement, whether the outcomes can be repeated under identical circumstances. According to Lebovitz, Levina, and Lifshitz-Assaf (2021), the preciseness of measurement is whether the outcomes reflect whatever the indicator is supposed to assess, which is called legitimacy. Reliable measurement is based on the evaluation of the failure reports within the CI, which can be justified with perfect statistical measurement. All the insights from the contractors and policymakers can be stated through the perfect measurement processes of reliability testing. By evaluating the proportion of standard deviation, or covariance data, between the components that make up a statistic and the entire variance, Cronbach's alpha can be used to evaluate the trustworthiness of a measure. The theory states that there should be significant correlations between the variables concerning the variation in whether the measuring device is accurate.

Calculating Cronbach's alpha is similar to averaging possible reliability through split-half rating. Validity testing was done using the statistical method, which may be gained through measuring “scale” in “IBM SPSS.” From the perspective of Sürücü & Maslakci (2020), there are three main types of validity: content, face, and construct validity. The accuracy of the research findings can be stated through the testing of fidelity in the study. The assessment of construct validity determines if a measurement instrument accurately captures the object of concern. Evaluating a test's content accuracy determines if it accurately captures every facet of the concept. Face validity considers how suitable an examination's material appears at first glance. The failure of the CI is the less effective ability of local constructors to gain knowledge based on a particular industry.

All practical information has provided a better aim for the study. On the other hand, the ability and efficacy of the subject are perfectly ensured through the systemic findings and investigation. The policymakers may have an adequate description of the construction insecurity in Ethiopia, which may be considered an action against obstructing to bring any issues to the study.

The consistency and accuracy may perfectly be managed or result in a practical description of Ethiopia's local CI.

3.9. Ethical Consideration

Study ethics have been maintained by developing ethical questions about the topic for the participants. The interview session maintained the security of the participants. At the time of the survey, there was no unethical interference in gaining information about the scenario. Surveys and interviews are critical aspects of acquiring data for the study. That is why data collection was done efficiently and decisively without harming anybody's emotions and feelings.

3.10. Summary

The effective technique and procedure have been carried an effective action in the study to meet the primary objective and hypothesis. This section aims to display all strategies and the formation of the entire study regarding the main subject. The systematic approach involves persistent planning regarding particular research subjects. Proper planning and the researcher's creativity have ensured proper execution. This section has highlighted all the strategies in an effective manner in which research philosophy, approach design, collection, and analysis have been depicted in a clarified way. Questionnaire design, sampling, and population have also been justified in this section, which adequately describes all application strategies.

CHAPTER 4: DATA ANALYSIS

This chapter's primary aim is to discuss the critical discoveries derived from the survey conducted as part of this study. The collected data will be analyzed to fulfill the research objectives and address identified gaps. Statistical analysis will present the survey data, while thematic analysis will be applied to the interview responses. An overall summary of the chapter and findings will be provided at the end.

It is important to note that while 103 surveys were collected, only 35 are attached and referred to. The 35 included surveys were hand-picked as they represent the primary responses received. Focusing on the most salient and illustrative responses gathered, the decision to attach only a subset of the surveys was made to avoid redundancy, as many of the remaining surveys provided similar or identical answers.

4.1. Survey results

4.1.1. Reliability

Cronbach's Alpha	N of Items
.996	13

Figure 5: Reliability test

(Source: SPSS)

A reliability test was conducted during this study, and Cronbach's Alpha value was found to be 0.996. According to Suryanto et al. (2023), the ideal value of Cronbach's Alpha is 0.6. Sürücü and Maslakçi (2020) state that Cronbach's Alpha indicates the internal consistency of the research, with values ranging from 0 to 1. Values between 0.6 and 0.9, and those approaching 1, indicate higher internal consistency. This study's identified reliability value is higher than 0.9,

demonstrating that the findings are highly reliable and valuable. Cronbach's Alpha value evidences the high reliability of this study.

4.1.2. Demographic

Table 1: Demographic data

Profession	Percentage
Policymakers	4.85
Contractors	38.83
Consultants	58.31

(Source: SPSS)

The participants of this study were chosen from multiple groups, including policymakers, local contractors, and consultants. A total of 103 people participated in the survey. Of these, 4.85% were policymakers, 38.83% were local contractors, and 58.31% were consultants related to the CI. Including participants from these diverse groups was beneficial for collecting a range of perceptions, which enriched the data and enhanced the study. The input from local contractors, policymakers, and consultants provided vital information, ensuring robust findings that support the research objectives.

4.1.3. Frequency

Table 2: Frequency analysis

Statements (responses in percentage)	Strongly Disagree (STD)	Disagree (D)	Slightly Disagree (SLD)	Neither Disagree Nor Agree (NAD)	Slightly Agree (SLA)	Agree (A)	Strongly Agree (STA)
S-1: The current capacity of local contractors in Ethiopia is sufficient and reliable to handle large-scale construction projects.	13.6	10.7	7.8	4.9	14.6	34.0	14.6
S-2: There are challenges in maximizing the capacity of local contractors in Ethiopia.	6.8	8.7	9.7	6.8	15.5	33.0	19.4
S-3: The Ethiopian government provides adequate support, facilities, and resources to enhance the capacity of local contractors.	24.3	16.5	6.8	5.8	20.4	15.5	10.7
S-4: A lack of specific technical skills or expertise in the ECI hinders local	5.8	17.5	17.5	5.8	17.5	18.4	17.5

contractor's capacity.							
S-5: Technology and innovation can play a significant role in maximizing the capacity of local contractors in Ethiopia.	8.7	9.7	12.6	5.8	28.2	15.5	19.4
S-6: Bureaucratic and regulatory barriers hinder the growth and expansion of local contractors in the ECI.	6.8	8.7	14.6	5.8	20.4	21.4	22.3
S-7: Tender requirements are overly strict, making it impractical for local contractors in Ethiopia to participate.	9.7	9.7	10.7	6.8	22.3	23.3	17.5
S-8: Excessive foreign outsourcing of contractors is projected further to harm the capacity of local contractors in Ethiopia.	7.8	9.7	7.8	6.8	20.4	25.2	22.3
S-9: Access to financing for local contractors in Ethiopia	15.5	19.4	11.7	8.7	20.4	10.7	13.6

is adequate to support capacity maximization.							
S-10: The Ethiopian government and relevant authorities should take more steps to support the growth of local contractors and maximize their capacity in the ECI.	8.7	11.7	9.7	6.8	19.4	24.3	19.4
S-11: Success stories and best practices from other countries and industries could be applied to the ECI to enhance the capacity of local contractors.	7.8	11.7	8.7	5.8	16.5	32.0	17.5
S-12: The future of the ECI looks promising, and local contractors will play a crucial role in its growth.	9.7	10.7	10.7	6.8	21.4	27.2	13.6
S-13: There is a willingness to participate in capacity-building programs or collaborative efforts to	5.8	9.7	13.6	6.8	19.4	27.2	17.5

enhance local contractors' capacity in Ethiopia.							
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(Source: SPSS)

This survey used various statements related to the ECI to gather participants' perceptions. These statements were instrumental in the data collection process, providing comprehensive insights and further aiding the understanding of the major themes surrounding the capacity of Ethiopian local contractors.

S-1: The current capacity of local contractors in Ethiopia is sufficient and reliable to handle large-scale construction projects.

This statement aimed to gather survey participants' perceptions regarding the workforce and industrial capacities of the ECI. The industry depends on crucial factors such as financial resources, leadership and human resource capabilities, and the collaborative efforts of its workforce for the successful execution of large-scale constructions. Participants' opinions varied, and responses were distributed among seven options: strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, and strongly agree.

The responses were as follows: 13.6% strongly disagreed, 7.8% disagreed, 14.6% slightly agreed, 34.0% agreed, and 14.6% strongly agreed. The findings indicate that most survey participants agree with this statement, suggesting that Ethiopia has sufficient contractors to manage large construction projects. The presence of many employees in the construction sector is effective, enabling timely completion of extensive projects.

S-2: There are challenges in maximizing the capacity of local contractors in Ethiopia.

Increasing the capacity of local contractors in Ethiopia is crucial, as they face challenges related to their growth. This statement highlights potential obstacles in the ECI, which increase the

risks associated with expanding the capacity of local contractors. The survey responses varied widely, indicating diverse beliefs about the extent of these challenges.

15.5% of participants slightly agreed, 33.0% agreed, and 19.4% strongly agreed. These results suggest that the majority believe it is challenging to increase the capacity of Ethiopian contractors. Conversely, 6.8% strongly disagreed, and 8.7% disagreed. The higher percentage of agreement indicates that contractors face significant challenges in increasing their capacity. Therefore, it is necessary to identify new methods to help contractors enhance their capabilities.

S-3: The Ethiopian government provides adequate support, facilities, and resources to enhance the capacity of local contractors.

The role of the Ethiopian government was highlighted in the survey through a statement question aimed at understanding the perception of the government's contribution to the ECI (ECI). The Ethiopian government could support local contractors in increasing their capacity. The governing bodies provide this support, which is crucial for the contractors' capacity building.

This statement received diverse feedback from survey participants. Specifically, 24.3% strongly disagreed, and 16.5% disagreed. Conversely, 20.4% slightly agreed, 15.5% agreed, and 10.7% strongly agreed. The analysis indicates that while many participants believe the Ethiopian government supports local contractors, a substantial portion disagrees. The majority opinion, however, is that the governing bodies provide support and take measures to enhance the capacity of local contractors. This suggests that most survey participants perceive the Ethiopian government as supportive of local contractors.

S-4: A lack of specific technical skills or expertise in the ECI hinders local contractor's capacity.

Technical knowledge is essential in the modern era and is particularly vital for contractors in Ethiopia. This statement in the survey addressed the importance of technical skills among construction workers, emphasizing the necessity for local contractors to improve their capacity. The survey participants shared similar opinions on this issue, indicating that lacking technical

skills is a significant problem among Ethiopian contractors. The survey results showed that 18.4% agreed, 17.5% strongly agreed, and 17.5% slightly agreed with the statement. The remaining percentage expressed varying degrees of disagreement. These findings suggest that most survey participants recognize the technical knowledge gap among local contractors and believe it negatively impacts their capacity.

S-5: Technology and innovation can play a significant role in maximizing the capacity of local contractors in Ethiopia.

Innovation is crucial for Ethiopian local construction contractors to overcome market challenges. Survey participants showed a positive perception of the role of technology and innovation in enhancing capacity. The statement addressing this received 8.7% strong disagreement. However, most participants agreed with the concept: 15.5% agreed, 28.2% slightly agreed, and 19.4% strongly agreed. These results indicate mixed responses, with a small section of the surveyed population skeptical about the effectiveness of technology. On the contrary, the majority believed technology and innovation are essential for the CI in Ethiopia. Their feedback suggests that local contractors can use modern technologies to innovate new methods, thereby increasing productivity and capacity.

S-6: Bureaucratic and regulatory barriers hinder the growth and expansion of local contractors in the ECI.

Regulatory and bureaucratic barriers are significant factors affecting the ECI. These include government guidelines, regulations, and other necessary aspects that local construction contractors must follow. It is common for Ethiopian contractors to face issues due to the nature and requirements of government regulations, which can be time-consuming and cause delays in the construction process. These barriers can hinder capacity growth. The statement received 20.4% slight agreement, 21.4% agreement, and 22.3% strong agreement, indicating that most survey participants believed this notion was confirmed. In other words, bureaucratic and regulatory barriers are major reasons for delays in capacity growth among Ethiopian contractors.

S-7: Tender requirements are overly strict, making it impractical for local contractors in Ethiopia to participate.

Tender requirements include aspects and information related to construction projects that contractors must follow. This statement in the survey highlighted the importance of tenders for the CI and investigated their influence on contractors. The survey suggested that strict tender guidelines can cause issues for contractors and delay their growth. It is challenging for local contractors to comply with all tender requirements, often leading to failure in the industry.

The survey participants largely supported this statement despite mixed responses. Strict tender requirements limit participation scope, a common issue for Ethiopian contractors. According to the survey, 9.7% strongly disagreed with the statement, 22.3% slightly agreed, 23.3% agreed, and 17.5% strongly agreed. This indicates that strict tender requirements are a significant issue for Ethiopian contractors, often causing them to fail to meet all requirements and slowing their growth. Consequently, they struggle to increase their capacity as needed. Although responses varied, most participants identified strict regulations and procedural requirements as restraining the potential development of Ethiopian contractors.

S-8: Excessive foreign outsourcing of contractors is projected further to harm the capacity of local contractors in Ethiopia.

Foreign outsourcing is a crucial factor in this context. It is typical for governing bodies or parties to transfer project responsibilities to foreign entities due to price differences, workforce availability, and a lack of technical skills among local contractors. This practice limits growth opportunities for domestic contractors, a concern echoed by many survey participants. Excessive foreign outsourcing is recognized as a significant issue for local contractors in Ethiopia.

According to the survey results, 20.4% of participants slightly agreed, 25.2% agreed, and 22.3% strongly agreed with this statement. Conversely, 9.7% disagreed, 7.8% slightly disagreed, and 6.8% remained neutral. Although responses were mixed, most agreed that foreign outsourcing is a major issue for Ethiopian contractors. This indicates that excessive foreign outsourcing is detrimental to local construction workers, as it creates challenges such as insufficient training, lack

of funds for local wages, and limited technological education for local workers. Most survey participants believe that the high level of foreign outsourcing hampers the improvement process for local contractors.

S-9: Access to financing for local contractors in Ethiopia is adequate to support capacity maximization.

Access to financing is a critical issue discussed in the survey. The ECI benefits from various financial services, including credit services, deposit systems, insurance, payment systems, and risk management solutions. These financing facilities support the country's construction sector, promoting various business strategies and infrastructure development. Financial accessibility helps the CI grow by providing essential financial resources, influencing growth rates, and improving service quality.

Access to financial support is a positive factor for Ethiopian contractors, highlighting the importance of financial availability. The statement on this concept received mixed responses. The data shows that 15.5% strongly disagreed, 19.4% disagreed, and 11.7% slightly disagreed. Additionally, 8.7% neither agreed nor disagreed. However, the analysis also shows significant agreement with the statement: 20.4% slightly agreed, 10.7% agreed, and 13.6% strongly agreed. This indicates that while there are mixed opinions, there is a recognition of the potential for financial availability to support local contractors in Ethiopia, subsequently enabling them to maximize their capacity.

S-10: The Ethiopian government and relevant authorities should take more steps to support the growth of local contractors and maximize their capacity in the ECI.

The Ethiopian government must support domestic construction contractors. Through practical and regulatory measures, the government can significantly enable local contractors' development and growth. According to this statement, Ethiopian governing bodies must support local construction contractors in increasing their capacity levels and overcoming financial barriers. This support will also help improve their operational efficiency.

Survey participants showed mixed perceptions regarding this statement, selecting options ranging from strongly disagree to agree strongly. Specifically, 19.4% slightly agreed, 24.3% agreed, and 19.4% strongly agreed with the statement. The majority of survey responses supported the idea that government support is necessary to increase the efficiency and capacity of local contractors. According to the survey findings, most participants believe Ethiopian government bodies are crucial in supporting improvements and enhancing industrial efficiency.

Proper government support can help Ethiopian contractors learn new methods, allocate resources for continuous growth, and establish competence in the competitive market. The survey findings further indicated that a lack of government support can hinder the development process of local contractors in Ethiopia.

S-11: Success stories and best practices from other countries and industries could be applied to the ECI to enhance the capacity of local contractors.

Success stories and positive practices are motivational aspects that can significantly enhance the capacity of local contractors. The survey explores this concept to assess whether success stories can serve as motivational benchmarks and blueprints for development. The feedback from survey participants indicated meaningful findings.

Most survey participants agreed that success stories and positive practices from other countries could be applied to the ECI (ECI). According to the survey data, 16.5% slightly agreed, 32.0% agreed, and 17.5% strongly agreed with this concept. These stories and practices are part of the development process, motivating local contractors and boosting morale. The majority believed these success stories and best practices could benefit the ECI.

These stories can motivate and provide learning material for local contractors. They can adopt new construction techniques and methods, leading to gradual growth and innovative progress within the industry. Overall, the survey participants supported the idea that applying success stories and best practices from other countries can significantly enhance the capacity of local contractors in Ethiopia.

S-12: The future of the ECI looks promising, and local contractors will play a crucial role in its growth.

Ethiopian contractors must achieve growth, and assessing their capability is essential. The survey participants, primarily experienced professionals in the ECI, provided valuable insights into this matter. Their responses indicated the potential role of local contractors in the future growth of the ECI.

The survey results revealed a positive outlook for the ECI. Expressly, 27.2% of respondents agreed, 21.4% slightly agreed, and 13.6% strongly agreed that the future of the ECI looks promising and that local contractors will play a crucial role in its growth. These responses highlight the significant potential for growth and the importance of local contractors in achieving this growth.

According to the survey participants, there is considerable scope for Ethiopian contractors to increase their capacity. Local contractors need to adopt new methods and techniques to realize this potential. Although the obstacles identified by the respondents are significant, appropriate strategies can mitigate them. Ethiopian contractors must follow effective practices, seize opportunities, and implement innovative solutions to achieve long-term success.

The survey findings underscore the importance of local contractors in the future of the ECI and their capacity to contribute to its growth. By addressing the challenges and leveraging the opportunities, Ethiopian contractors can play a vital role in the promising future of the CI in Ethiopia.

S-13: There is a willingness to participate in capacity-building programs or collaborative efforts to enhance local contractors' capacity in Ethiopia.

The willingness among Ethiopian contractors to participate in capacity-building programs is crucial. High willingness indicates an interest in improving productivity, while low willingness suggests a lack of interest in enhancing productivity or capacity. This factor was assessed during the survey, and the statement was provided to participants to gauge their opinions. The responses

indicated that willingness to participate in capacity-increasing programs is high. Specifically, 19.4% slightly agreed, 27.2% agreed, and 17.5% strongly agreed with the statement. Most participants noted a significant willingness among Ethiopian contractors to recognize the need for capacity development programs.

This high willingness suggests local contractors are eager to expand their expertise with proper support. Their positive attitude towards adopting changes in business operations will help increase their industrial capacity and ability to handle large construction projects. Therefore, Ethiopian contractors must seize opportunities to demonstrate their willingness to enhance their capacity.

4.1.4. Descriptive Analysis

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
The current capacity of local contractors in Ethiopia is sufficient and reliable to handle large-scale construction projects.	103	1	7	4.56	2.066
There are challenges in maximizing the capacity of local contractors in Ethiopia.	103	1	7	4.92	1.861
The Ethiopian government provides adequate support, facilities, and resources to enhance the capacity of local contractors.	103	1	7	3.71	2.159
There is a lack of specific technical skills or expertise in the ECI that hinders local contractor's capacity.	103	1	7	4.37	1.945
Technology and innovation can play a significant role in maximizing the capacity of local contractors in Ethiopia.	103	1	7	4.59	1.907
Bureaucratic and regulatory barriers hinder the growth and expansion of local contractors in the ECI.	103	1	7	4.78	1.899
Tender requirements are overly strict, making it impractical for local contractors in Ethiopia to participate.	103	1	7	4.62	1.936
Excessive foreign outsourcing of contractors is projected to further harm the capacity of local contractors in Ethiopia.	103	1	7	4.87	1.913
Access to financing for local contractors in Ethiopia is adequate to support capacity maximization.	103	1	7	3.85	2.041
The Ethiopian government and relevant authorities should take more steps to support the growth of local contractors and maximize their capacity in the ECI.	103	1	7	4.67	1.962
Success stories and best practices from other countries and industries could be applied to the ECI to enhance the capacity of local contractors.	103	1	7	4.78	1.925
The future of the ECI looks promising, and local contractors will play a crucial role in its growth.	103	1	7	4.55	1.913
There is a willingness to participate in capacity-building programs or collaborative efforts to enhance local contractors' capacity in Ethiopia.	103	1	7	4.76	1.834
Valid N (listwise)	103				

Figure 6: Descriptive analysis

(Source: SPSS)

Descriptive statistics were used to gather the collected data's mean values and standard deviations. The variable (*N*) represents the total number of participants, essential for determining the range of successful volunteer participation in the survey. In this context, (*N*) is 103, indicating that 103 participants were initially selected for the survey, and all responses were successfully recorded.

A 7-point Likert scale was employed to gauge participant responses to the survey questions. Options 5, 6, and 7 indicated varying degrees of agreement, while options 1, 2, and 3 indicated disagreement. Option 4 denoted a neutral stance, indicating neither agreement nor disagreement with the statement/question.

The first statement pertained to the current capacity of Ethiopian contractors within the CI and received a mean value of 4.56, indicating a tendency towards agreement among respondents. The mean value of 4.56 suggests that respondents predominantly selected options 5, 6, or 7, indicating agreement with the statement. This indicates a consensus among participants that the current capacity of Ethiopian contractors is adequate for large-scale construction projects.

The overall findings of this section are related to the outcome of frequency analysis. As mentioned earlier, Ethiopian construction contractors can deal with large-scale projects. Both descriptive and frequency analysis outcomes show this concept to be genuine. It also means Ethiopian construction contractors can handle giant construction projects. The need for government support is also highlighted here. The outcome of descriptive analysis also shows that increasing capacity is challenging for Ethiopian construction contractors. These challenges can increase the period for achieving growth. A descriptive analysis was also conducted on a statement related to this concept. It showed adequate information with the acquired mean value.

The second statement regarding the challenge of increasing the capacity of Ethiopian contractors received a mean value of 4.92, indicating a strong agreement among respondents. The standard deviation values for these two statements were 2.066 and 1.861, respectively, indicating low variability in the responses. This suggests that the responses were closely clustered around the

mean values, indicating a high level of agreement among participants. The low standard deviation is a positive indication that the mean values accurately represent the overall responses of the survey.

As mentioned earlier, the value of the standard deviation is considerably low. Hence, the collected data has fewer deviations from the actual mean value. This also proves that it can be challenging for Ethiopian construction contractors to increase their capacity. The mean value and low value for standard deviation prove this concept. In other words, the result of the descriptive analysis was beneficial in supporting this statement. The Ethiopian government also somewhat supports their local contractors. This statement received a mean value of 3.71. It also means that research participants have selected options 5, 6, and 7 more than the remaining. The decimal value higher than 0.50 supports this statement. This means that the government of Ethiopia tends to support local contractors in capacity development. This statement also received a standard deviation value of 2.159. It also entails that the collected dataset is closely tied to the mean value.

A lack of technical skills is another vital issue in the ECI. A statement related to this received a mean value of 4.37. The standard deviation of this statement is 1.945. The mean value is also clustered with the value for the standard deviation of the identified data. It further denotes that a lower variation can be observed in the entire dataset. Another vital statement was used in this survey, and the importance of innovation and technology was highlighted. The descriptive analysis for the responses showed that the mean value for this statement was 4.59, which is a higher mean than other statements discussed above. The standard deviation for the said statement stood at 1.907 in this context, denoting a relatively close association of positive responses towards the statement.

4.2. Interview Results

The interview results are presented using justified themes derived from the responses collected during the interview process.

Theme 1: The current landscape of local contractors in Ethiopia is not up to the mark.

The status of Ethiopian local contractors is deemed subpar, with most interviewees indicating weaknesses in various aspects such as finances, skill sets, practices, and business operations. According to Salleh et al. (2020), the construction sector has a high demand for skilled labor, emphasizing the need for highly competent workers. Therefore, the status of Ethiopian local contractors is considered inadequate, with interviewees suggesting the need for self-improvement and enhancements in business practices to increase their capacity. Despite these challenges, interviewees highlighted the high potential of Ethiopian local contractors to enhance their capacity and contribute to the country's development.

Ethiopian local contractors possess high potential, as highlighted by interviewees. However, their financial status is considered inadequate. Zhu (2021) suggests a strong link between financial infrastructure and construction projects, indicating that financial support is crucial for project scope. The interview results indicate that Ethiopian local contractors currently face challenges related to financial management, including a lack of understanding of the time value of money and transaction difficulties within the sector [*Refer to Appendix 1*]. These challenges hinder their operational activities, limit their growth, and impede success in the competitive market. Most interview candidates suggested that improving the financial status of local contractors is crucial for future success, enabling them to adopt new approaches and expand their capacity.

The knowledge base of local contractors in Ethiopia is deemed inadequate, particularly concerning technical aspects such as machinery and digital tools. Interviewees emphasized the need for local contractors to enhance their technical knowledge. Assaad and El-Adaway (2020) note that technical complexities in the CI are on the rise. According to interview feedback, local contractors lack comprehensive technical skills, including professional and occupational competencies, and are notably deficient in industry-specific knowledge [*Refer to Appendix 1*]. This deficiency extends to their inability to effectively utilize modern digital tools, essential for increasing production efficiency. Ethiopian local contractors' lack of technical knowledge limits their access to these tools and hinders their ability to address industry challenges. Interviewees stressed the importance of improving and expanding technical knowledge among local contractors.

Interviewees expressed concerns about the operational approaches of Ethiopian local contractors, noting that their business processes are outdated and rely on traditional methods. These contractors have not incorporated modern business practices into their operations. Assaad and El-Adaway (2021) emphasize the importance of updated practices in the CI, as they enable timely project completion and provide a competitive advantage. Interview feedback suggests Ethiopian local contractors must adopt modern practices to stay competitive. The reliance on outdated methods is causing issues during construction projects and is inadequate for the current market demands. Ethiopian contractors must update their operational approaches to remain competitive in today's market.

The current status of Ethiopian local contractors is insufficient for undertaking significant work, mainly due to the country's regulatory environment, which is considered non-conductive. This regulatory environment harms local contractors, as interviewees noted. Huang et al. (2020) highlight the importance of supportive regulations, which are lacking in Ethiopia and contribute to the weak status of local contractors. Interview feedback indicates that the absence of supportive regulations has negatively affected Ethiopian local contractors, emphasizing the need for government intervention in areas such as pricing, PM, and overall competitiveness [*Refer to Appendix 1*]. This lack of support hinders their capacity to expand. Despite these challenges, interviewees expressed confidence in local contractors' capabilities to handle various projects, including commercial, infrastructure, residential, and mega projects, provided proper government support.

Theme 2: Multiple challenging factors are hurting the ECI

The diminishing capacity of Ethiopian construction contractors presents a significant challenge, indicating a continuous decline in their capabilities. Reiman et al. (2021) note that decreasing capability or productivity levels are challenging aspects that can affect an organization's competency. The decreasing capability of local contractors is causing operational issues and hindrances in performing their duties effectively. A lack of adequate capacity for construction projects is a critical concern, particularly in handling high-pressure work. Interviewees emphasized this as a significant challenge for local contractors, highlighting the need for urgent attention.

As emphasized by interviewees, a lack of government support or provision poses a significant challenge for Ethiopian construction contractors. Luthra et al. (2020) assert that supportive government policies are crucial for a company's long-term sustainability. The interview feedback underscores the absence of supportive policies, particularly regarding outdated regulations such as procurement policies that require review and updating [*Refer to Appendix 1*]. Non-supportive government policies or a lack of provision for local contractors are significant obstacles, leading to operational activities and capacity enhancement challenges. There is a pressing need for supportive policies from the Ethiopian government to enable local contractors to improve their operations and increase their capacity.

As highlighted by interview participants, foreign outsourcing is a significant concern for local construction contractors in Ethiopia. They noted that excessive outsourcing poses a barrier to local contractors, damaging the fabric of the ECI (ECI). Interviewees emphasized the need to take necessary steps, review policies, and exercise restraint to promote the growth of local capacity [*Refer to Appendix 1*]. Forte and Ribeiro (2020) discuss a strong correlation between foreign outsourcing and job loss, suggesting that excessive outsourcing reduces job opportunities for local workers, including Ethiopian contractors. This situation limits the scope of work available to local contractors and increases the likelihood of failure. A diminished scope of work is undesirable and hampers growth, as it limits working opportunities and, consequently, the capacity of local Ethiopian construction contractors.

As highlighted by interviewees, a lack of planning is a significant challenge for local construction contractors in Ethiopia. They emphasized that local contractors often lack the habit of planning and fail to implement optimized and suitable utility and planning for construction machinery and equipment [*Refer to Appendix 1*]. Araya (2021) underscores the importance of planning in the construction process, noting that effective planning can lead to successful project outcomes, while a lack of planning can result in delays. This issue is prevalent in the ECI, causing contractors to face challenges in their operations and impeding future growth opportunities. Therefore, local contractors must prioritize and improve their planning practices.

As noted by interviewees, innovation is crucial for construction contractors in Ethiopia. They highlighted that local contractors often lack access to modern construction machinery and

face a significant shortage of professionals with expertise in implementing modern technologies and tools in the industry [*Refer to Appendix 1*]. According to Zhang et al. (2020), essential construction machinery such as forklifts, excavators, and loaders play vital roles in the construction process, reducing construction time. These machines are considered valuable additions for construction contractors. However, as mentioned by interviewees, Ethiopian construction contractors do not have sufficient access to such machinery, posing a significant challenge for them. Interviewees suggested that local contractors must invest in these machines to improve their operations. The lack of access to these machines is cited as a significant cause of failure and delays in construction projects in Ethiopia.

Technical knowledge is a critical factor for construction contractors. Moshood (2020) emphasizes the importance of combining technical skills and practical knowledge, highlighting that workers with high technical knowledge are highly valued in the modern era. However, as mentioned by interviewees, the lack of technical knowledge poses a significant challenge for Ethiopian local contractors, affecting their technical capacity [*Refer to Appendix 1*]. This challenge is exacerbated by low competence ratings among the ECI (ECI) workforce, from semi-skilled labor to expert professionals, and a lack of awareness regarding ethics and professional standards, as noted by interviewees [*Refer to Appendix 1*]. This lack of technical knowledge and skill hinders their growth and development within the industry, serving as a barrier for local contractors. Therefore, they must focus on enhancing their technical skills.

The price increase is a significant and challenging factor for Ethiopian local contractors, as noted by interviewees who highlighted the impact of rising inflation rates in Ethiopia on local contractors [*Refer to Appendix 1*]. These challenges hinder their growth. Musarat et al. (2021) suggest a correlation between inflation and the CI, noting that inflation complicates the calculation of monetary needs for construction projects and negatively influences expense calculations. This issue is prevalent in the ECI, where continuous inflation is a significant concern. For instance, the Ethiopian Birr (ETB) experienced a 141.5% decrease in value due to the high inflation rate in 1991 and the structural adjustment of the Ethiopian economy (Kayamo, 2021). Consultants face challenges in adjusting product prices due to the requirement to forecast future challenges and the restriction that price changes can only be made once every 12 months. However, marketing

advisories in Ethiopia can change product prices in less than a day, as noted in the interviews *[Refer to Appendix 1]*.

Financial issues are a significant concern in the ECI, as interviewees noted that local contractors frequently encounter challenges obtaining loans from financial institutions. They also face constant financial shortages, a lack of financial capacity to handle multiple projects, and payment delays *[Refer to Appendix 1]*. Naumenkova et al. (2020) point out that financial loans are crucial for supporting construction projects, as they help meet the monetary demands of such projects. However, local construction contractors in Ethiopia often struggle to access this financial support and face numerous hardships. According to the interviews, they frequently fail to secure loans from financial institutions, leading to a lack of credit letters that would enable them to access foreign currency. This limitation hinders contractors from purchasing machinery, finishing materials, and other essential items, ultimately impacting their ability to complete projects successfully.

The high rate of corruption and intense market competition pose significant challenges for Ethiopian construction contractors, as noted by several interviewees. Issues of favoritism, where clients request specific contractors for projects and consultants show favoritism towards clients, create challenges for contractors trying to meet client demands. Consultants often provide little assistance to contractors, exacerbating problems of nepotism and favoritism in the industry *[Refer to Appendix 1]*. Furthermore, local contractors are expected to have all the necessary machinery before starting a project, which is often unfeasible and creates additional challenges. Zhai et al. (2021) highlight the importance of policymakers implementing anti-corruption strategies during construction projects. The high rate of corruption negatively impacts local contractors, hindering their growth and development. To address these challenges, construction contractors must adopt meaningful strategies, possibly through their associations, to influence policymakers and overcome corruption-related issues. Additionally, the high rate of competition, exacerbated by excessive foreign outsourcing, is another major challenge for construction contractors.

Theme 3: The existing policies, regulations, and government interventions disadvantage the local Ethiopian contractors.

The interview process successfully gathered essential information regarding existing policies, regulations, and government interventions in the ECI (ECI). According to interviewees, the government appears to support local Ethiopian contractors. However, there are limitations in supportive policies, financing, and training program facilitation aimed at local contractor capacity development [*Refer to Appendix 1*]. Additionally, the regulatory environment in the ECI was identified as lacking favorability. Interviewees noted that bidding requirements are not accommodating and are not aligned with contractor capacity in Ethiopia. Furthermore, an interviewee also mentioned the absence of incentive programs in Ethiopia, which could be essential for local contractors to increase productivity. This highlights the inadequacy of Ethiopian regulations and policies in supporting local contractors in improving their status.

One interviewee highlighted the importance of training programs on safety, health, construction law, capacity building, and other factors. These programs are promoted by the CCM (CCM). However, according to the interviewee, these training programs are not currently mandatory, meaning contractors can skip them at their discretion. The "OSH" (OSH) program, mentioned by the interviewee, includes guidelines for protection against workplace hazards (Ilo.org, 2024). The Ministry of Labour and Social Affairs implements necessary changes and follow-ups. While the OSH program provides guidelines for the working environment, it does not specify rules for construction firms or local contractors. This gap indicates a need for further attention from governing bodies to ensure these programs are comprehensive and mandatory.

The governing bodies of Ethiopia created Proclamation No. 1076/2018 to establish PPPs (PPP) to improve public service quality (Gov., 2024). The board overseeing this proclamation comprises members from various sectors, including irrigation, electricity, water, and the planning commission. However, it does not include any representatives from the Ethiopian construction sector. As a result, the objectives of this proclamation are not aligned with the interests of local construction contractors. One interviewee supported this view, emphasizing the need for regulatory and policy improvements to address the challenges faced by local contractors. Developing beneficial policies specifically for the local construction companies in Ethiopia is necessary. This situation further highlights the inadequacy of supportive policies for local contractors in Ethiopia.

The recent initiatives of the Ethiopian government include mandatory requirements for local construction contractors. According to the findings, domestic and international construction companies operating in Ethiopia must register with the "Ministry of Urban Development and Construction" (Giz.de, 2020). Additionally, these companies must adhere to the rules specified in the "Ethiopian Building Proclamation 624/2009," "Building Regulation no. 243/2011," and Ethiopian building code standards. These regulations provide essential guidelines for construction contractors, including the criteria for selecting construction materials. These rules are critical for contractors in managing their budgets for construction projects. Moreover, the advisory regulations in Ethiopia help address internal and external issues, commodity price volatility, and periodic droughts.

Through these guidelines, the limitations or restrictions of the Ethiopian government's economic resources are quickly identified, and issues in the implementation of enforced decisions can be addressed appropriately. The interviewees have also acknowledged other proclamations, such as "Proclamation No. 1076/2018," which accommodates PPP projects and assists in PPP model-related policy formulation and adoption [*Refer to Appendix 1*]. These policies further demonstrate the Ethiopian government's eagerness to implement and integrate policies and regulatory frameworks that facilitate the successful adoption of PPP models. They shape implementing policies, directives, and guidelines alongside PPP project listings. According to the interviewees, these policies recognize the private sector's role in securing the quality of public services and contributing to the country's economic growth.

The contribution of the ECI to the gross domestic product (GDP) has significantly increased. According to Cheng & Darsa (2021), the industry's contribution rose from 9% in 2015/2016 to 18% in 2017/2018, thanks to the government's allocation to various infrastructure projects. However, despite this positive growth, the lack of supportive policies has led to issues, particularly concerning time delays in the CI. These delays highlight the absence of beneficial policies and government support. Interviewees emphasized the importance of government support and financial facilities in improving operational activities. Such support would enable local construction contractors to reduce delays and complete projects on time. Furthermore, government provisions in Ethiopia could help local contractors acquire machinery, allowing them to use

modern tools for each task. Rahimian et al. (2020) note that construction project managers commonly use modern technologies to monitor construction progress, enabling them to make timely and informed decisions.

Theme 4: Collaboration, proper regulatory and governance framework, and risk management are essential to analyzing best practices and aiding policy and decision-making.

The decision-making phase is crucial in the development process, as ineffective decisions can lead to a loss of competitive edge and reduced productivity. According to Kumar (2020), financial growth and decision-making are interconnected, meaning that a firm's growth depends on its decision-making process. Ethiopian local contractors must focus on this aspect to improve risk management, decision-making, and policy identification results. Most interviewees suggested focusing on collaboration, corruption management, fair regulatory frameworks, client expectations, and other vital factors. These aspects were crucial for stable growth, indicating that Ethiopian local contractors can enhance their decision-making skills through improved operational approaches.

According to interviewees, local contractors can focus on collaboration. In this situation, local contractors can collaborate with the public and private sectors. Interviewees suggested this also ensures successful knowledge exchange, technology transfer, and skill enhancement. The interviewees further mentioned that PPP initiatives would integrate the acknowledgment of private sector partners for financial challenges, enable the local contractors to engage in ambitious projects, and foster sustainability within the economic and working environment through a focus on innovation, risk sharing, and development [*Refer to Appendix 1*]. According to Lam et al. (2021), collaborative practices are helpful to increase creative activities. In this context, it provides scope for innovative measurements for operational activities. Collaboration is also essential for knowledge management. It aligns with the interviewees' perception that it is a critical tool for knowledge growth. The interviewees also suggested that financial barriers can be reduced with collaboration among private and public sectors. According to Al Haddar et al. (2023), it is common for business firms to partner with other private companies. It will help them mitigate financial challenges, which is mainly applicable to the case of Ethiopian construction contractors. This

indicates that they can also partner with private or public companies. It will allow them to acquire funds for the construction operations.

The interviewees also highlighted the need for proper regulatory policies and governance frameworks to empower the capacity development of local contractors in the ECI. In other perspectives, effective regulatory policies and governance frameworks are helpful for decision-making. According to Kyere and Ausloos (2021), corporate governance and a firm's financial performance are interconnected. The findings of this study also suggest the need for an independent board in an organization. This concept is also applicable to construction firms in Ethiopia. A robust corporate board helps make proper decisions. These decisions are beneficial in reducing operational costs and improving operational efficiency. According to Fernández-Temprano and Tejerina-Gaite (2020), board composition is essential to corporate governance. This approach is beneficial for integrating necessary policies into the organizational working culture. In other words, board members are liable to undertake justified measurements. These are meant to improve the outcome of decision-making and aid necessary corporate policies.

Risk management is another essential part of the decision-making process. According to Gurtu and Johny (2021), risk management is helpful for organizational growth. Risk management risk assessment is beneficial for reducing vulnerable decisions and approaches. In other words, risk assessment highlights potential risk factors. It allows companies to understand the difference between positive and negative approaches. Hence, this is an integral part of the decision-making process. Simpson et al. (2021) highlighted that risk assessment is helpful to make informed decisions. Similarly, Ethiopian construction contractors can make proper decisions with a risk assessment that will allow them to highlight potential risk factors. Hence, it will help them to minimize futile investments for construction purposes. Proper risk assessment is necessary to avoid wrongful decisions. Hence, this is an unavoidable part of organizational development and decision-making.

Theme 5: Education, Training, Innovation, Quality Assurance, Appreciation, and Rewards are key pragmatic factors to reverse the poor status of Ethiopian local contractors

Education is an integral part of the professional development process. A lack of necessary education is harmful to a professional employee. In other words, a lack of knowledge in specific areas reduces the chance to improve professional capabilities. Sharing knowledge is a crucial aspect of educational support. According to Zhao et al. (2021), knowledge sharing allows an individual to help others in problem-solving situations. In other words, a proper knowledge or education base will help employees overcome critical situations and adopt new trends. According to Marbun et al. (2020), it is usual for employees to acquire education from reputed universities. Similarly, Ethiopian construction workers must acquire a prosperous technical education from the learning institutes. It will allow them to cope with modern emerging technologies. It will also help them integrate modern technology into construction operations and utilize it efficiently.

Training programs are also helpful for employees. Employees can improve their professional compatibility with a proper training program. According to Rivaldo and Nabella (2023), training programs benefit employee performance. It also means that employees with adequate training can perform the necessary work efficiently. According to Saniuk et al. (2023), an employee with technical and managerial knowledge is often desired in the current era. Hence, it is also necessary for Ethiopian construction contractors to increase their technical knowledge. It will help them to utilize modern digital tools for construction purposes. Apart from this, learning traditional PM styles, such as waterfall projects, is beneficial for planning and executing different strategies (Thesing et al., 2021). An adequate level of technical knowledge is essential to use modern technology and acquire a positive outcome. It will also allow Ethiopian constructors to reverse their current state and enhance their performance rate. Noting the view of the interviewees, local contractors also need to invite professionals with high performance and experience to share knowledge through skill training programs and invite companies with innovative technologies into regular work bases [*Refer to Appendix 1*].

The need for innovation is also high for the Ethiopian local contractors. It also indicates that local contractors in Ethiopia need to focus on a brand-new approach to the construction process. According to Azeem et al. (2021), developing new methods to solve critical problems is essential. In other words, new methods are helpful to overcome market challenges where traditional methods face failure. Similarly, the local contractors of Ethiopia need to focus on newer

techniques. This will allow them to reverse their current situation. It will also help them to create a positive impact on their performance level. Apart from this, the Ethiopian local contractors must also improve their contract-checking process, price recording, and indexing alongside other regulatory activities. According to the suggestion of the interviewees, the bill of quantities needs checking by a third party before contract signing, along with efficient price recording and indexing practices for implementation of PA during construction [*Refer to Appendix 1*]. It will minimize any types of misconception and miscommunication in later periods and ensure better regulatory practices during construction projects.

Quality assurance is another vital factor linked to a company's reputation. In other words, product quality is directly connected with brand perception in the market. A study by Simbolon et al. (2020) also showed that product quality is highly correlated with purchase decisions, meaning a company with superior products tends to attract customers. Similarly, product quality is a vital factor for Ethiopian local contractors. It is beneficial for them to increase the quality of their work. An interviewee also suggested the need for quality assessment and internal audit. Abiodun (2020) also supported this concept and stated that internal audits help improve organizational performance. A similar concept is also applicable to Ethiopian contractors.

Employee engagement is another vital factor in terms of organizational growth. Ibrahim et al. (2020) also highlighted that employee engagement is essential for discussion among top management. High employee engagement is connected to the aspects of organizational performance. Hence, firms must identify methods to increase the engagement level of the employees. Prasad and Vaidya (2023) state that rewards and compensation are essential in increasing employee motivation and engagement. This is also applicable to the local construction firms from Ethiopia. It is helpful to reverse their current situation and restore them to successful companies.

4.3. Chapter Summary

This chapter has explored and illustrated the findings from the primary data collected through surveys and interviews. The research included an analytical evaluation of the responses

gathered from voluntary participants in the ECI. The most prominent personnel were interview respondents, including project consultants, local contractors, and policymakers.

The survey responses from 103 participants revealed that most personnel shared similar opinions regarding both the positive and negative aspects of local contractors in the ECI. The data from interviews with 14 interviewees were evaluated thematically. These themes were divided based on the elements of the interview questions, resulting in five themes identified from the objective themes the questions focused on. The interviewee responses consisted of various observations and opinions, facilitating a comprehensive understanding of the participants' experiences, perspectives, and the socio-cultural contexts influencing them.

CHAPTER 5: DISCUSSION

The present chapter discusses the findings discovered and evaluates them with the data findings presented in the previous chapter. The study has been expanded to test and justify the findings, considering the hypotheses developed earlier. A one-sample T-test was conducted to evaluate the mean sample against the population through the survey questions developed in relation to the hypothesis that was identified. The findings gathered from the survey and interviews will be further discussed, as will the hypothesis and the previously reviewed literature.

5.1. Testing the Hypothesis

One-Sample Test						
Test Value = 0						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
The current capacity of local contractors in Ethiopia is sufficient and reliable to handle large-scale construction projects.	22.416	102	.000	4.563	4.16	4.97
There are challenges in maximizing the capacity of local contractors in Ethiopia.	26.839	102	.000	4.922	4.56	5.29
The Ethiopian government provides adequate support, facilities, and resources to enhance the capacity of local contractors.	17.437	102	.000	3.709	3.29	4.13
There is a lack of specific technical skills or expertise in the ECI that hinders local contractor's capacity.	22.794	102	.000	4.369	3.99	4.75
Technology and innovation can play a significant role in maximizing the capacity of local contractors in Ethiopia.	24.442	102	.000	4.592	4.22	4.96
Bureaucratic and regulatory barriers hinder the growth and expansion of local contractors in the ECI.	25.527	102	.000	4.777	4.41	5.15
Tender requirements are overly strict, making it impractical for local contractors in Ethiopia to participate.	24.228	102	.000	4.621	4.24	5.00
Excessive foreign outsourcing of contractors is projected to further harm the capacity of local contractors in Ethiopia.	25.854	102	.000	4.874	4.50	5.25
Access to financing for local contractors in Ethiopia is adequate to support capacity maximization.	19.168	102	.000	3.854	3.46	4.25
The Ethiopian government and relevant authorities should take more steps to support the growth of local contractors and maximize their capacity in the ECI.	24.152	102	.000	4.670	4.29	5.05
Success stories and best practices from other countries and industries could be applied to the ECI to enhance the capacity of local contractors.	25.187	102	.000	4.777	4.40	5.15
The future of the ECI looks promising, and local contractors will play a crucial role in its growth.	24.151	102	.000	4.553	4.18	4.93
There is a willingness to participate in capacity-building programs or collaborative efforts to enhance local contractors' capacity in Ethiopia.	26.331	102	.000	4.757	4.40	5.12

Figure 7: One-Sample T-test

(Source: IBM SPSS)

H1: A lack of technical skills can hinder local contractors' capacity in the CI.

The first hypothesis states that a lack of technical skill hinders the capacities of local contractors in the CI. The fourth statement mentioning the lack of specific technical skills in the ECI obstructing local contractors was the survey question that specifically addressed this hypothesis. The p-value for this statement's hypothesis testing resulted in 0.000, a highly significant value. Significance measured through p-value signifies the compatibility of the data against the statistical model and hypothesis (Kubsch et al., 2021). 0.000 is a value lower than 0.05, indicating that the statement had high significance and compatibility against the proposed hypothesis of lacking technical skill challenging local contractor capacity within the CI.

Moreover, the t-statistic in one-sample t-test evaluates the difference comparison of the sample's mean against the assumed population and the 95% confidence interval of the true population average (Muhammed Al-Kassab, 2022). The t-statistic for this statement included a value of 22.794, signifying the statistical difference between the mean of the sample and the assumed population, with a confidence interval of 95% between the values 3.99 and 4.75. In addition, certain statements, including the first statement regarding the ECI's local contractor's current capacity for managing large-scale projects being reliable, had a high significance of 0.000 p-values. This is followed by the second survey statement regarding challenges in local contractors' capacity maximization in the ECI, sharing similar results of significance and compatibility of the data with the hypothesis, indicating its relevance.

H2: Innovation is essential for maximizing the capacity of the local contractors.

The second hypothesis indicates that the possibility of innovation is essential for the capacity maximization of domestic contractors. The fifth survey statement mentioned that technology and innovation could play a significant part in maximizing the capacity of ECI local contractors. The p-value for this statement through the t-test was 0.000, a highly significant value that confirmed that the information is compatible with the hypothesis. The t-value was 24.442, noting the statistical difference between the mean of a sample and that of the hypothesized population. The 95% confidence interval was between 4.22 and 4.95, suggesting the range of the true population mean. Innovation and technology significantly influence the development and enhancement of the CI, making them essential for increasing the potential for construction

contractors' capacity. This t-test would suggest that this hypothesis is significant and relevant to the study.

H3: Bureaucratic and regulatory barriers delay the growth and expansion of domestic contractors.

The third hypothesis specifies the impact of bureaucratic and regulatory barriers in delaying the progress and expansion of domestic contractors. The sixth survey statement directly addresses the hypothetical assumption that bureaucratic and regulatory barriers hinder the growth and expansion of local contractors in the ECI. The 0.000 p-value suggested that the findings regarding this statement were statistically compatible with the study's hypothesis. The t-value for this had been identified as 25.527, mentioning the differences between the mean of the sample and the hypothesized population. The confidence interval was 95% between 4.41 and 5.15. These values further statistically presented the findings related to this statement to be relevant and justifying the hypothesis as accepted.

Moreover, findings are gathered from two additional statements. The third statement mentions the Ethiopian government providing adequate support, resources, and facilities for capacity enhancement for local contractors, and the tenth statement concerns the Ethiopian government and authorities taking more steps to support industrial growth. Government authorities are responsible for assisting the industry in successful growth, and its bureaucratic hindrances challenge domestic contractors to expand and grow capacity successfully. Each statement gathered a p-value of 0.000, indicating the compatibility of the findings with the hypothesis and its significance being justified.

H4: Strict tender requirements can create issues in maximizing the capacity of the domestic contractors.

The fourth hypothesis is that strict tender requirements can create problems for domestic contractors. The survey question that focused on this hypothesis was the seventh statement, which noted that tender requirements are stringent and make it impractical for local contractors to participate. The p-value was 0.000, indicating that the statement's data findings are relevant and

relatively compatible with the study's hypothesis. The t-value that resulted as 24.228 showed the statistical difference between the mean of the sample and the hypothesized population. The confidence interval of the true population mean stands at 95% between 4.24 and 5.00. This further signifies that the results of the data findings were significant and statistically related to the fourth hypothesis.

The statement gathered the findings related to the hypothesis, which were further confirmed by the statistical measures. Tender regulations are necessary for letting local contractors effectively participate in the CI. The issue of strict tender regulations further challenges the effectiveness of securing fair and practical participation of local construction contractors. This further instills that the statement provides that the hypothesis is effective and justified in relation to the study. The fourth hypothesis has hence been statistically justified as relevant and acceptable based on the data findings.

H5: Excessive foreign outsourcing can create issues for local construction contractors.

The fifth hypothesis of the research focused on determining whether excessive foreign outsourcing can create problems for local construction contractors. The eighth survey question's results regarding the statement that excessive foreign outsourcing possibly can project more harm to the capacity of the Ethiopian local contractors are directly concerned with this hypothesis. The p-value evaluated from the t-test was 0.000, indicating high significance and compatibility of the data findings with the results. The t-value signifies that the statistical difference between the sample's mean and population was 25.854. The confidence interval hence noted had been 95% between 4.50 and 5.25. This entails that the hypothesis has been identified as justified for the study.

5.2. Discussion

The above study aimed to evaluate the potential of local contractors in the ECI regarding the enhancement of capacity in terms of failed construction projects. Through primary qualitative and quantitative research, this study gathered findings in this regard. It was found through the data analysis that the situation of the ECI (ECI) is not efficiently supporting the local contractors in exercising their capacities. The survey results presented mixed yet agreeable reactions, yet the

interview provided a more insightful answer. Moreover, contractors have been identified as priority sectors in terms of industrial development in Ethiopia, and challenges such as lack of technical skills and financial challenges are problematic for development (Abagissa, 2021). Some of the significant concerns discovered through the findings included a vital requirement for financial support and advancement in technical skill capacity in the industry for the local contractors. Similar insights had been previously gained from the reviewed literature.

The research aimed to identify the current scenario of the ECI, mainly focusing on the local contractors and their growth and success. Additionally, a range of issues contribute to the weak and poor capacity of Ethiopian contractors regarding inefficient construction projects. These problems regarding contractors' capacity and industrial shortage include financial and equipment shortages, lack of technical and managerial, among other human resource skills, and procedural and system-based problems within the industry (Kebede & Tiewei, 2021). Similar findings in the literature review are attributed to the existing problems of an unskilled workforce and insufficient financing to challenge construction project developments (Bajjou & Chafi, 2018). As per the research findings, there is a lack of knowledge of technical and technological applications and an outdated nature of operational activities among the local contractors in the ECI.

In addition, it was also found through the analysis of gathered findings that the hypothetical implications regarding lack of technical skill are also related to the poor situation of Ethiopia's CI. The current landscape of Ethiopia concerning the CI (CI) is relatively weak, as had been perceived by the interview and survey results. The results accumulated from the research survey and interview provided that there is also the potential problem of regulatory circumstances in the present scenario, and a lack of authority support and regulatory environment were reported as challenging the scenario for the CI. Issues such as regulatory problem changes, government obstructions, and other regulatory problems are risks for Ethiopia's local contractors (Wubet et al., 2023). The research findings added to this by insinuating the role and need for contribution from the government and regulatory bodies for capacity building and support to domestic contractors as a positive necessity in the present situation of the ECI. The literature review also notified similar issues of CIs regarding securing regulatory support for construction market needs.

The present research has also aimed to explore the possible challenging aspects regarding capacity maximization that the local contractors of the ECI have to face. The results from the survey responses addressed informative statements regarding this subject, noting that technical skills, financing issues, tender regulations, regulatory barriers, and excessive foreign outsourcing contribute to the capacity maximizing problems among the domestic contractors in the ECI. The interview responses were more insightful regarding the issues and challenges the local contractors in Ethiopia face regarding capacity maximization and other related adverse effects on the CI. The findings suggested a problem regarding decreasing capability, challenging the competency levels (Reiman et al., 2021). The findings provided that the low capability of local contractors in Ethiopia is one of the negative aspects hindering their construction capabilities.

The study's findings also contributed to finding and evaluating different challenging issues obstructing local contractors' capacity maximization. The research findings developed from the interview responses' insights indicated more detailed inferences on these issues. The interviewees identified the lack of government support due to the shortage of provisions as a negative contributor to the local contractors' capacity development. Moreover, the results also noted one of the significant problems connected to foreign outsourcing. Further, policies and strategies followed in Ethiopia are primarily focused on gaining the attention of foreign investors for collaborative industrial growth (Hauge, 2020). This also applies to the case of ECI since the interview and survey results supported the fact that an excessive practice of foreign outsourcing has deteriorated the situation for working opportunities. Foreign outsourcing has been massively limiting capacity growth among the local contractors from Ethiopia's CI, as found in the evaluated results, which connect with the justified hypothesis regarding the same aspect.

The results further introduced a lack of planning as another issue in the industry and the local contractors. The findings added that planning played a significant role in the implementation of construction equipment, and its lack impacts the future improvement of local contractors. Planning is considered an integral construction activity for enabling efficient equipment implementation and preparation for construction (Chen et al., 2022). The findings further provided additional information regarding the problem of planning construction projects that had an impact

on the execution of construction projects that could lead to delays of construction projects from being successfully finished within the initial deadlines.

The results and findings further added that despite innovation and technical knowledge being some of the most critical aspects for capacity optimization of the local contractors, the ECI lacked these. According to the results, Ethiopian local contractors lack access to innovative construction machinery and professional skill development for technological implementation. Innovative technology transitions can positively change the construction inductee, as seen in the previously reviewed literature. Adaptation of technology can instigate innovation in the industry, and there is a visible gap in the case of innovation and technology in this region (Shukra et al., 2021). The lack of availability to innovation and technology has further admittedly contributed to the slow and delayed development of construction projects.

As derived from the findings, a lack of awareness and knowledge regarding the industry's ethics and standards challenges local contractors from capacity growth. Moreover, local contractors face the issue of a lack of technical skill, knowledge, and experience in the industry (Esaiyas & Kahssay, 2020). The information extracted from the findings further implied the challenging impact of lacking technical and professional expertise and understanding, which is a major problem among a diverse industrial workforce, including semi-skilled laborers and high-level professional experts. Similar insinuations were found in the literature review regarding the workforce's quality of information and knowledge, affecting their delivery of activity and performance.

Rising prices and related financial issues have been associated with the negatively impacting issues and challenges that have been challenging the optimization of capacity among the local contractors in the ECI in the research findings. Some of the studies that had been reviewed prior to evaluating the research's derived findings had also identified similar elements, such as increasing project costs and material and labor pricing impacting the CI. Moreover, changes in equipment and labor prices, economic fluctuations such as in currency, financial shortages, and limited access increase challenges in the CI and project developments (Melaku Belay et al., 2021). Again, the research findings, from the interview specifically, identified more problems, such as corruption and market competitiveness, that have challenged the development of local contractors

and the ECI itself. For instance, corruption is considered one of the problems associated with Ethiopia's CI (Abera, 2021). These challenges were identified through the research findings, which assisted in exploring the research objective for discerning industrial issues associated with capacity maximization and growth of the local contractors of the ECI.

The research findings provided inferences regarding the research objective of analyzing the existing policies, regulations, and interventions laid by the government concerning ECI. The survey findings indicated the possible inefficacy of policies, bureaucratic obstructions, and the necessity of supporting development within the industry and local contractors. The interview findings were more detailed in providing information regarding government policies and regulations aligned with the development of the ECI. The results identified that the limitations of policies and strategic governmental interventions for local Ethiopian contractors are inadequate for supporting them. Furthermore, the government is involved with the CI in Ethiopia as a regulator, financier, and operator, among several other roles (Gashahun, 2020). The reviewed literature also noted that the Ethiopian government is a state actor in the CI. As the results presented, the delivery of incentives through policies is essential for assuring local contractors' productivity and capacity growth.

The results implied the role of the governing bodies and regulatory environment in securing training, safety, and health among different progressive elements. The literature review indicated that health and safety are essential to CI development. According to the results, the Ministry of Labour and Social Affairs is one of the responsible governing bodies regarding securing efficient labor safety regulation implementations in the ECI. The programs and interventions such as OSH (OSH) programs impact the industry by providing efficient work safety through policies and interventive regulations (Tezel et al., 2021). The research results further enriched information regarding government interventions and policies integrating development within the industry, such as the CCM (CCM) promoting training programs. However, they are not identified as mandatory requirements despite needing to be so.

These research findings have also provided information regarding different governmental proclamations that the regulatory bodies of Ethiopia have created. Analysis of the findings indicated that different proclamations and regulations had been developed for different strategies

and requirements within the industry as strategic promotion of industrial growth. Certain proclamations, such as Proclamation No. 1076/2018 about PPP, inclined that private sector participation is essential for achieving the country's development goals (Kebede, 2022). However, the findings noted that the proclamation regarding PPP (PPP) models for different industries and its concept could be effective. Nevertheless, local contractors need to improve. Different regulations and mandatory requirements are essentially met through the intervention of government bureaucracies in Ethiopia to maintain regulations and standards within the CI to improve local sections (Kebede & Zhang, 2020). The research findings also noted that other proclamations and strategies impact modifications in the CI's standardization, guidelines, and regulations.

The findings further implied the potential lack of governmental regulations in securing the interests of the local contractors despite the intention of governmental bodies to support the growth of the CI. The PPP proclamation provided guidelines, policies, and bid documents for transparent and effective PPP implementation in the industry (Gebre & Demsis, 2022). Government policies such as those geared towards PPP implementation prioritize the role of the private sector in ensuring the quality and efficiency of the economic and industrial growth of the country rather than improving the effectiveness of local contractors and their participation. The research findings were connected to the assumed hypothesis that bureaucratic regulations limit and hinder the development of the ECI.

There have also been findings related to the importance of the effectiveness of collaboration, regulatory frameworks, risk management, and other aspects of the CI's development. Regulatory frameworks and policies are crucial for the successful development of decisions and the growth of Ethiopia's CI (Belay et al., 2022). The research findings from the survey supported the notion that the Ethiopian government and its respective regulatory bodies have an impactful role in securing the effective growth and development of the local contractors in the CI. The results from the interview supported the aspect as well. For instance, certain aspects such as tender regulation and financing accessibility had been mentioned to be limiting the capacity growth of contractors that could be improved through attempts at better bidding and

tender regulation practices or financing for capacity development, as was also identified through the research's interviews findings.

The research results added the suggestive action of collaboration among local contractors between the public and private sectors. The findings from the interview implied that collaborative attempts could improve the contractors' situation from the perspective that they can secure successful and efficient transfer of resources and skills. Collaboration through PPP model initiatives can ensure broader transfer and expansion of skills, knowledge, and resources among public and private sectors within the CI (Olojede et al., 2020). The findings, particularly from the interviews conducted in the research, expanded on the suggestive measure of collaboration as an essential form of addressing and integrating effective practices among the local contractors in the ECI.

The results and findings identified the role of governance frameworks and management systems as necessary for the decision-making and performance of organizations within the ECI. Corporate governance is considered an integral aspect of CI firms, with diverse framework elements such as a corporate board and other aspects, including risk management, which are essential for decision-making (Ullah et al., 2021). The research findings mentioned that governance frameworks such as corporate boards and risk management are essential for the ECI and are relatively efficient in enabling better policy formulation and decision-making processes for the improved industrial practices that the local contractors are involved with and enhance the situation of local contractors' capacity.

The research findings assisted in exploring the research objectives and intentions for identifying and elaborating on potential measures and methods for improvement of practices among the local contractors within the ECI. The survey results mostly projected positive responses from the statements that the exchange of experiences and collaborative and training programs can improve local contractors' capacity within the ECI. Training and education have also been noted in the findings derived from the interview findings. Education and knowledge can enhance the workforce's understanding and problem-solving skills (Stephen & Festus, 2022). Developing knowledge and understanding is effective for local contractors in improving their situation and working on capacity-building using modern and innovative equipment.

The findings added that training programs immensely impact local contractors' capacity building development. Training programs provide local contractors with enhanced opportunities to grow and build technical capacity for adopting modern and innovative technology (Sidgel, 2023). Training programs have been added as practical and essential for increasing the performance and efficacy of local contractors. The interview findings provided several detailed information and essential inputs regarding the same. Training programs through collaboration among skilled industrial professionals and local contractors was one of the presented findings that insisted on training programs being one of the vital pragmatic strategic factors in the potential roadmap to the enhancement of local contractors in ECI.

The findings derived from the interviews were more detailed in providing information on the subject of pragmatic strategies and aspects of the Ethiopian local contractors' situation. As already depicted through the findings, innovation is identified as a practical necessity for the Ethiopian local contractors working within the CI. Innovative development is a necessity for local contractors in the CI to focus on newer technology and methods for better standard performance level improvement (Cupers et al., 2023). It was found through the interviews that specific innovative changes in the operational activities, such as communication regarding price recording and indexing practices, could enhance regulatory practices and price adjustment issues in construction projects. The findings provided an insightful implication that there is a need to innovate operational activities and processes that could help improve the performance and efficiency of local contractors in the ECI.

The research findings further identified that certain pragmatic strategic elements, such as quality assurance and employee engagement through reward and appreciation, were also indicated. Quality control assurance and assessment of products are often specialized skills of local contractors in the CI (Oad et al., 2021). Quality assurance denoted that it was essentially linked to the development of firms and local contractors in the ECI. The findings added that employee engagement processes such as rewards and compensations could improve local contractors' situation through appreciation and influence engagement, increasing opportunities for local construction firms and contractors within the ECI. The findings have shed light on the objective

of potential pragmatic strategies for the local contractors in ECI to improve their poor situation as well.

5.3. Chapter Summary

The above chapter elaborates on the research findings from the primary data, both quantitative results from the survey and qualitative information from the interviews. This evaluative discussion of findings was carried out in connection with the research objectives and hypotheses the study aimed to explore. The chapter explored the results that had been found through this primary information. These findings were tested to justify hypotheses developed based on previous literature reviews. This chapter further decided that the five hypotheses regarding this study's subject had been proven significant, relevantly justified, and valid for the research.

The chapter further expanded on the research study. It discussed the results and findings gathered and analyzed earlier in this study relating to the research objectives and aims. The research objectives and related findings concern the current landscape of the ECI and the local contractors involved, alongside the challenges and barriers they face within the industry. The findings were also understood to have overviewed potential existing policies, regulatory interventions, and pragmatic aspects that the study had identified relating to the research objectives. The research findings were discussed concerning the research objectives and justified hypotheses regarding the research subject of Ethiopian local contractors within the CI.

CHAPTER 6: CONCLUSION

The research study explored the subject of Ethiopian local contractors and their problems, focusing on the CI. The study gathered information from primary findings and research to gain direct and valuable input for the study to have a more direct understanding of potential maximization within the industry. The following chapter is a concluding segment of the research study, summarising and evaluating the research findings through the perspectives of the study's aim, purposes, and implications. The study demonstrated through the research findings that the developed hypotheses were justified and relevant. This section will further summarise the research study and its evidential findings concerning the implications that this study intended to provide. This would be accompanied by recommendable suggestions influenced by the above study concerning improving the situation of Ethiopian local contractors within CI.

6.1. Summary of the Research

The conducted research was an intuitive study of the issues and challenges that the research intended to gather and evaluate for both academic and industrial exploration purposes. The research had, in summation, grown as an informative and enriched study through the evaluation of direct and primarily found information. The research provided information concerning local contractors and their current capacities in the ECI. The inferences gathered from the study identified that the potential landscape of the industry, in close relation to the local contractors, is not as suitable and positively supportive for growth. The present situation of the ECI has been undeniably identified as requiring improvement for multiple reasons. It presents challenges to the industry and the potential for developing and expanding the capabilities of domestic contractors.

The data derived for this research was evaluated through primary data analysis for quantitative and qualitative information. The research, through a survey study, gathered quantitative information from 103 survey participants for the research, with approximately 4.85% of them having been policymakers, 38.83% local contractors, and 58.31% consultants comprising the sample population. The responses gathered from the research's sample survey participants were responsive and cooperative in responding to the survey questions. The quantitative information gathered from the survey was evaluated through frequency and descriptive statistics

of the quantitative responses presented statistically. On the other hand, the qualitative findings were gathered by interviewing 103 participants, including contractors, consultants, policymakers, and other people involved in the ECI. The qualitative information was presented through a thematic analysis that mentioned and explored the key findings from the interview responses regarding the research study.

The research mainly provided informative details regarding comprehending the current potential of the ECI local contractors and the scope for enhancement regarding failed construction projects. The quantitative and qualitative research findings established that the present situation of the ECI is not as favorable for domestic contractors in the market. These findings further mentioned different aspects that influenced elements that had challenged the situation for the industry, including financial and technical skill issues and shortages, among others. The research additionally identified more impactful components concerning the development of the current poor condition of the local contractors from the CI in Ethiopia. The research has been insightful in indicating that other related elements, such as lack of equipment and unsupportive regulatory conditions and policies, had further negatively contributed to the worsening situation of the ECI and the industrial capabilities of the local contractors. The research findings added to potentially exploring the potential conditions of the ECI, focusing on the local contractors.

The research further explored the possible hindrances and challenges identified through the detailed and informative additions gained from the interview responses and their evaluation through the thematic analysis. The research has been informative in terms of providing a subjective insight into the different challenges that have hindered the opportunities for domestic contractors working in the ECI. The research discovered that a diverse range of issues and obstructions, such as excessive foreign outsourcing, the challenge of tender regulations, lack of accessibility to financing, and lack of equipment and technical knowledge, had been some of the recognized hindering elements to the progress of local contractors' capacity development. These issues have challenged local contractors' growth and effective capacity optimization in the industry and market. Technical knowledge and equipment are practical components in capacity development, and their lack further contributes to hindered growth and capacity maximization of the local contractors.

Moreover, the research added that other obstructing components, such as lack of government support, weak financial capacity, corruption, market competitiveness, and lack of planning, had also been identified as related to the poor capacity maximization of the local contractors in the industry. The research findings contributed to the understanding and evaluating the graveness of the obstructed situation of the local contractor capacity maximization in the ECI. Capacity maximization is supported by diverse aspects such as governmental interventions, financial capacity, and construction activities, including planning and market and industry situations. A lack of efficient financial capacities, such as keeping up with pricing fluctuation, can prevent contractors from effectively expanding their reach into the ECI. The lack of efficient and supportive regulatory interventions challenges local contractors from effectively maximizing their capacity within the industry.

The research added that there was insufficient support regarding government policies and interventions by Ethiopia's bureaucratic and regulatory authorities. The research findings contributed to the understanding that although there are different forms of regulatory interventions and policies concerning the CI in Ethiopia, these policies have hardly supported the local contractors. The research findings noticed and elaborated that there have been different policies and regulations, such as ensuring proper building standards and regulations for securing the development of health, safety, incentivization, and training of local contractors working in the ECI. The research findings noted diverse regulatory and governmental interventions mentioned and explored through the qualitative findings, further contributing to the research's objective of expanding on different governmental aspects regarding ECI. The research findings expanded on the different forms of policies and interventions related to the development of determining and exploring the research identified as an aspect of the case of capacity maximization of the local contractors in the ECI.

The research findings additionally indicated a potential lack of supportive intention from these policies and interventions regarding government policies. The findings pointed out that some interventive policies, such as regarding training, are suggestive instead of mandatory. The policies supporting PPP models are more supportive towards the private sector. Moreover, the findings suggestively added that there is a need to secure these interventive regulations and supportive

policies to favor the local contractors from the ECI. The research successfully expanded on existing government interventions and regulations that support local contractors and their capacity maximization efforts in the ECI, identifying the potential and challenges posed by these policies.

The findings from the research, both qualitatively and statistically, supported the idea of the possible need for collaboration and development of infrastructure and regulatory sections of the industry regarding the growth of capacity optimization for the local contractors in the industry. The opportunistic development of skills and equipment was identified as related to the local contractors' potential growth. The research added that certain factors, such as collaboration between public and private sector organizations, can support the effective expansion of equipment, skills, and knowledge of the local contractors regarding the industry. The development of experience, skills, resources, and regulatory frameworks for securing efficient forms of development to improve the situation of local contractors has been further identified as essentially contributive to the ECI. The research also identified the diverse pragmatic principles and aspects that play a significant role in shaping and changing the direction of potential and capability of the local contractors.

The research added insights into the potential pragmatic strategies capable of inducing effective forms of strategic implementations for developing a prosperous and progressive condition for local contractors to identify and successfully work through for capacity maximization and optimization of potential. The research findings identified these pragmatic aspects and implementations, including innovation, education, training quality assurance, affirmation, and rewards for the workforce, which had been potential motivators for strategic enhancement of the local contractors within the industry. The research findings and their implications have been evaluated in connection with the developed hypotheses of the research. The hypotheses were tested through a one-sample t-test to evaluate the findings related to the hypotheses for justifying the research data, which had been later identified as relevant and justified concerning the research findings.

The discussion developed through this study's findings has been briefly elaborated on the overall research findings accumulated from the survey and interview for the research. The discussion developed from the findings correlating with the research objectives being met and

explored. The research intuitively indicated the situation of the local contractors in the industry and identified a realistic and efficient form of strategic implementation that could be capable of securing and effectively developing better potential opportunities for the local contractors in the ECI to expand their reach and potential in the industry against their foreign outsourced competitions. The development of this research study successfully expanded on the research objectives and hypotheses that the study had intended to explore academically and industrially.

6.2. Implications of the Findings

The study used both questionnaire-based answer evaluation and theoretical systematic theme analysis to understand the condition of the Ethiopian construction sector. Different implicating factors have been found when evaluating the opinions of the domestic contractors, domestic consultants, and policymakers who are the research participants. Per their opinions, the rising cost of essential commodities, especially petroleum oil, has been the leading factor behind the rise in the cost of raw construction materials. The gross value added to the CI creates a problem for the contractors in maintaining the cost of the market-ready buildings at a low level. The implications of inflation in the nation have been a critical factor behind contractors' decreasing laborers' salaries, resulting in different types of movements in the workplace, including unrest and strikes. These factors gradually drive the failure of most of the construction projects in Ethiopia, irrespective of their budget and size.

The present study focused on exploring the research subject of maximizing the potential of local contractors in Ethiopia's CI. The study aimed to explore the phenomenon of local contractors in the ECI concerning the issue of failed project implementation. The research focused on Ethiopian local contractors from the CI and their challenging conditions regarding effective participation in projects and industrial development. The study aimed to expand its focus on the issues later discovered through the research study and its findings.

The research discovered a diverse range of findings and research studies that had been identified through the primary findings gathered from surveys and interviews. The research successfully identified the industry situation and its potential impact on local contractors from Ethiopia and its CI. The development of the research study identified different findings that are

impactful in the development of the issues and challenges that are causing a decline in the situation of the contractors in the industry. Moreover, the research mentioned challenges such as financial shortage, lack of financing, tender regulation problems, and lack of technical skills and meditation. The research further identified other related problems, including non-supportive governmental policies and regulatory interventions, excessive foreign outsourcing, and lack of knowledge and awareness.

The research gathered findings related to the existing policies and interventions developed and imposed by the regulatory and government bodies within the ECI. Several regulations and interventions include the development of health, safety, training, building and construction standards, and collaborative initiatives such as PPP models. The research further identified that these policies required more focus on local contractors. In addition, the research contributed to expanding the research regarding the economic, social, and political impacts by identifying challenges and potential scope of improvement within the industry. The research further delivered findings that supported regulatory frameworks, governance, innovation, and collaboration as solutions to efficient performance development among local contractors. The findings also indicated that education, technology, training, innovation, quality assurance, appreciation, and rewards are identified to be contributing to the development of potential and capacity maximization of ECI local contractors.

The research's findings are most specifically implied to serve as an academic and industrial contributing study aimed at understanding the solution of the industry in general and the local contractors in particular. Through its findings, the research identified the capability of developing a realistic and pragmatic strategic implementation and roadmap to develop better potential and capability maximization of the local contractors within the ECI. The study's findings imply that the research could contribute to expanding the understanding of and commendable growth of academic and industrial research regarding Ethiopian local construction contractors.

As mentioned earlier, the research used primary data for both the quantitative and qualitative research methods. The information and findings gathered from this research are original and authentic for being accumulated through primary data collection and analysis methods. However, there is a lack of implementation of more detailed secondary research for this study to

support qualitative research. Furthermore, the research only has access to primarily accessible information, risking it to be potentially biased. The research study further identified the potential challenge in terms of the lack of a finer and more detailed in-depth development of the study due to its smaller sample from the representative population. This could also lead to the probable limitation in a more widespread and focused development of findings representative of the concerned population involved with the Ethiopian industry.

The study presents the potential future scope for research in the academic and industrial spectrums concerning the ECI and its involved local contractors' potential maximization. The development of this research intends to contribute to the progress of research regarding ECI and local contractors to improve the potential and capacity for local contractors from ECI. The study also acts as a commendable development of potential solutions to the issues that limit the potential maximization of contractors, including government policies, the progress of local companies and contractors involved within the industry, and its local industrial growth.

The research had determined its prospect of significance as being related to assisting in expanding the research in the direction of being a contributing study in the phenomenon of ECI in connection to its past, present, and potential future situations. The research development was also significant in exploring the involvement of the government and regulatory authorities concerning the ECI. This study intended to contribute significantly by expanding on the role and organizational participation of the industry's involved actors, such as firms and professionals, that had been further established through the research. Moreover, the research aimed to denote its importance by establishing the issues and challenges faced by the ECI, particularly by the local contractors. The significance of the research was efficiently discovered and met by exploring and connecting with the research objectives and hypotheses.

6.3. Recommendation for Further Research

6.3.1. Investment Outsourcing Development

The Ethiopian construction sector depends upon the Central Bank and other national banks that conduct business in Ethiopian industrial belts. The debt collection procedure of these banks

procures sheer robustness along with a non-flexible loan policy in most cases; the failure of the construction projects, mainly in the mediocre socioeconomic zones located around different portions of Ethiopia, takes place due to unorganized planning and improper commencement approaches procured by the contractors (Assefa, 2020). Despite being a developing nation that bears the sheer requirement of financial growth, the government of Ethiopia has yet to show any interest in changing the loan policies regarding the development of domestic industries (Schindler et al., 2023). Large-scale contractors bear significant areas of development because of the enormous size of their tendered projects. The main problem lies in the parts of the local-level contractors and contributors.

With the rise of the pandemic, people worldwide faced the challenge of keeping the prices of essential commodities low. Ethiopia, one of Africa's developing nations, was no exception. The country has remained unable to cope with global inflation almost three years after the pandemic. As a result, most housing society apartments remain vacant at present. At this stage, completing the project in an advanced manner and creating a profitable business outcome has been a massive problem for small-time contractors in the country (Heaton et al., 2020). The investors' engagement is a highly beneficial move that the contractors can undergo. These investors would not be giving loans but would invest in the projects and help them allocate their projects from housing societies and apartments to offices, parks, and roads on a bigger scale (Apostolopoulou, 2021). Collaboration with local legislation can create an elevated value of success. Besides this, the collaboration of local contractors with investors will add a new flow to the generation of a better PM system in Ethiopia.

6.3.2. Initiation of Regulatory Act Regarding Construction Materials Cost

Ethiopia faces various challenges regarding raw material-based development and supply chain generation, especially in the CI. The two main reasons behind the growth of the average cost of building materials are fewer suppliers and many contractors as customers. Like any other African country, Ethiopia's geographical diversity creates a problem in generating tools like bricks, cement, and other essential materials for construction (Bredenoord, 2024). Moreover, developing nations need the proper capacity to induce highly advanced technology-based new-age instruments in the global CI. With the gradual change in the Ethiopian climate, the water supply is decreasing

for industrial purposes to cope with domestic and drinking needs. The Blue Nile and the river basins in the country face issues with the carrying charges of the bricks due to the problems present with the high price of petrol (Kumar et al., 2021). At this stage, the contractors remain unable to bargain with the suppliers. The Ethiopian national authorities bear the only functional stage-taking ability.

The Ministry of Urban Development must completely reformulate the market rates of building materials. These commodities must be fixed, and no raw material supplier can sell them at a higher price. Estimating the proper cost for the construction materials should be implemented within the country so that the project facilities can be adequately executed (Moshood et al. 2020). The abrupt increase in the price of materials used in the CI hampers the proper implementation of projects in Ethiopia. The regulating authorities should be more conscious of the illegal selling of raw materials within the country. By initiating the proper costs for the essential materials of the CI, the contractors can regulate the extra costs for generating different construction-related projects (Datta et al., 2023). The Ministry of Urban Development has to be stricter with illegal workers because of the increased costs of stealing materials in Ethiopia.

6.3.3. Development of Contract Management Strategy in the CI

The contract management strategy is the set of regulations and policies implemented for the management decisions for developing the CI. The authorities should select a proper contract strategy so that any misuse of the resources can be prevented. The CI of Ethiopia has to experience several types of issues within the country, so to improve the process and implement the projects properly, the contractors should initiate proper strategies, including the creation, collaboration, and approval of the PM strategies, administrative functions, and reporting and tracking of the initiation of the project-based implementation of the construction industries (Mustika et al., 2022). In the initial stage, the contract management process initiates the requests for authoritative contracts. After the negotiation, the collaboration between management and the CI authorities helped develop the PM process (Evans et al., 2020). Approving the proper contracts for the project implementation and execution of the contracts for the project implementation helps the management develop the construction company.

Using contract management software for the CI will help the authorities propel the ECI. This software will store the primary information about the contracts related to the CI in Ethiopia. Integrating the automated generation of contract management services. “Commercial leases” and the licensing agreements generalized the CI's administrative function. Using software systems in the CI, complex monitors are managed without the proper paperwork; the CI will get the facility to provide massive construction in Ethiopia (Belay et al., 2021). With the initiation of contract management, the documentation burden becomes more accessible, providing the facility to form the CI in Ethiopia. The elementary functions of the CI are strategies related to debt collection, heavy dependence on bank loans, and issues with the closure system of borders (Dafe et al., 2022). Developing strategies will allow the construction industries to improve their resource management, costs related to the construction materials, and the lack of experience in the management of the cost-effectiveness of Ethiopia.

6.3.4. Adequate Tender Set Generation

Adequacy in the generation of tenders for bidding purposes: The CI should implement more strategic plans to compete with the present market condition and gain ground despite several issues in the development process of the CI in Ethiopia. The tender generation will help the authorities manage construction in Ethiopia by reducing the time and cost of the construction. After creating the primary differentiation between the private and public tender systems, tender generation will provide a more efficient way to channel the high and low rates for construction (Tembo et al., 2023). The authorities should create an easy tender generation to improve the construction process by evaluating the tenders associated with all the construction industries (Tessema et al., 2022). The impact of the tender generation helps the authorities investigate the approximate cost generation for the total construction of the projects.

By initiating the E-tender in the tender generation process, the management and authorities related to the CI can develop the participation process of the tenders with different types of budgets. The efficiency of the internet, the initiation of the digitalized system within the conventional tender generation, and the improvement of the post-tendering project will provide excellence to Ethiopia's CI.

6.4. Chapter Summary

The CI of Ethiopia has experienced several types of issues in the implementation of various problems, and this chapter provides the scope for the researcher's further study of the current situation of Ethiopia. This study has conducted a detailed evaluation of primary data to understand the CI situation in the Federal Republic of Ethiopia. The challenges the domestic contractors face in generating, procuring, and completing a specific project are various and diverse. In this chapter, the researcher has focused on interconnecting the findings regarding the reasons behind the failure of the ECI with the objectives. After the interconnection is drawn, the detailed evaluation helps the researcher establish the areas of improvement in the study area. The need for the development of the Ethiopian government's construction policy, the requirement for a better workplace, and properly planned PM are covered in the recommendation section. The impact of climate change on the ECI and vice versa are two unexpected areas regarding the study topic, and the future group of researchers can generate a possible way of exploration through these facts.

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APPENDIX 1: INTERVIEW TRANSCRIPT

Q1: In your experience, how would you rate the overall capacity of local contractors in the ECI

- a. Excellent
- b. Good
- c. Average
- d. Weak

Q2: In your opinion, what are the specific areas of weaknesses or limitations in the capacity of local contractors in Ethiopia?

Q3: How do you perceive the present capacity of local contractors on the overall growth and development of the ECI?

Q4: Are there specific areas within the ECI where the limitations of local contractors are more pronounced (e.g., mega, residential, commercial, and infrastructure projects)?

Q5: In your opinion, what steps should be taken to enhance the technical skills and knowledge of local contractors in the ECI (e.g., programs and initiatives to provide training and education)?

Q6: How does the existing regulatory framework support or hinder the growth of local contractors in the ECI?

Q7: What are the bidding requirements' impact on local contractors in Ethiopia and how does it affect them?

Q8: How accessible and feasible is the current financing landscape for local contractors in Ethiopia?

Q9: How aware are local contractors in Ethiopia of the importance of quality standards and regulations in the construction industry?

Q10: Are there incentives or programs to promote the use of modern construction technology to innovate the work approach for local contractors in Ethiopia, and subsequently allow them to compete on an advanced scale?

Q11: What suggestions do you have to make local contractors more competitive in the ECI?

Q12: What are your opinions on issues of excessive foreign outsourcing and protecting the local industry?

Q13: What are your opinions on issues like pricing, project management, and overall competitiveness?

Q14: What are your views on Public-Private Partnerships to strengthen the capacity of local contractors in the ECI?

Q15: Once the capacity of local contractors is maximized, what's the long-term vision for the growth and sustainability of ECI?

Note: This list is a repetitive representative samples. Total number of respondents was 103.

Respondent	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
R1	All	Education										
R2	Mega projects	Knowledge transfer										
		Regular Training										
R3	All	Regular training										
		Appreciation and rewards										
R4	All	Regular Training										
		Induction program										
		Ethics awareness										
R5	Mega projects	Regular Training										
		Workshops										
		Networking										
R6	Infrastructure	Education										
		Knowledge transfer										
		Regular Training										
R7	Mega projects	Subcontractor experience										
	Residentials	Grow through contracts										
R8	Mega projects	Regular Training										
		Internships										
R9	Infrastructure	Management development										
	Mega	Skills assessment										
R10	Infrastructure	Regular Training										
	Mega Project	Certification										
R11	All	Regular Training										
		Ethics awareness										
R12	Mega Projects	Experience and tech access										
		Curricula revision										
R13	Reliance on foreigners.	Special Training										
R14	Mega Projects	Grassroot ethics training										
	Infrastructure											

Strongly Disagree	1	10	Policy-makers	1	5
Disagree	2	11	Local contractors	2	40
Slightly Disagree	3	9	Consultants	3	58
Neither Agree or Disagree	4	7			
Slightly Agree	5	15			
Agree	6	35			
Strongly Agree	7	16			