Assessment of the major challenges in the performance of building projects: The case of the commercial bank of Ethiopia headquarters' construction project in Addis Ababa.

BY: - Henok Kinfe Bekele

A PROPOSAL FOR PROJECT WORK SUBMITTED TO THE DEPARTMENT OF PROJECT MANAGEMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE MASTER OF ARTS DEGREE IN PROJECT MANAGEMENT AT THE UNIVERSITY OF ADDIS ABABA SCHOOL OF COMMERCE.

ADVISOR: Dr. Zegeye M.

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ADDIS ABABA

ETHIOPIA

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BY

HENOK KINFE BEKELE

ADVISOR: Dr. Zegeye Muluye.

Approved by the Board of Advisory Committee

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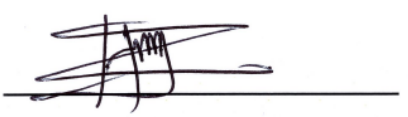
   External Examiner Signature

DECLARATION

I, Henok Kinfe Bekele, hereby declare that this Master of Art Project-work titled "Assessment of the major challenges in the performance of building project: The case of the commercial bank of Ethiopia headquarters' construction project in Addis Ababa." is my novel work and this study has not been submitted for the award of any program or any other institution. I have carried out the present study independently with the guidance and support of the project work advisor, Zegeye Muluye (PhD). Any other research or academic sources used here in this study have been duly acknowledged.

Declared by: **Henok Kinfe Bekele**

(Student researcher)

Signature: 

Date: 30 June 2022

STATEMENT OF CERTIFICATION

This is to certify that Henok Kinfe Bekele has carried out his project work on the topic entitled "Assessment of the major challenges in the performance of building project: The case of the commercial bank of Ethiopia headquarters' construction project in Addis Ababa". The work is suitable for submission to defense the project work.

Advisor's Name: **Zegeye Muluye (PhD)**

Signature: _____

Date: 30 June 22

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ABSTRACT

The main objective of the study was to identify and analyze the main challenges affecting the performance of construction projects in the case of the Commercial Bank of Ethiopia headquarters' construction project in Addis Ababa. Specifically, the study focused on the problems of high-rise construction projects, as the construction cost of these projects requires huge investments in foreign currency. The data for this study was considered to obtain a representative sample of project stakeholders using the random sampling technique. The study sample included representatives from the client (CBE), the consultant (AAU-AAIT), and the contractor (CSCEC). The target population consisted of all project stakeholders from the three parties mentioned above. The study used primary and secondary data and data collection was conducted using a structured questionnaire. The data was analyzed using Microsoft Excel professional 2016. Data analysis consisted of descriptive statistics. The study concluded that the main challenges were time, cost, and quality management. Based on the results of the study, the researcher recommended improving the capacity of the stakeholders in terms of attitude, skills and knowledge to address the main challenges mentioned above, as the cost of building these skyscrapers is exorbitant and can affect the country's economy. The study suggests that a similar study can be conducted in other mega projects in the country, as learning from the problem of previous projects could help save the country's low foreign exchange reserves.

Keywords: ***Building, construction project, cost, schedule and quality management.***

CHAPTER ONE: INTRODUCTION

1.1. Introduction

The architecture, engineering, and construction (AEC) industry is a multifaceted and dynamic business, as distinctive stakeholders partake in construction projects and pursue to achieve their goals with various welfares and relationships. Esa, Abdul Samad, and Alias (2014). Nevertheless, through pinpointing the essential trials, it is viable to see potentialities for triumph alternatively than crisis. For tasks to continue to move forward successfully, the undertaking administration body of understanding (PMBOK) and aid management skills of assignment managers ought to be always developed.

Effective venture management craves the capacity to control serendipity and deal with a range of challenges. A huge vary of factors can obstruct building projects. These elements have a consequential have an effect on not only on development initiatives however also on other sorts of projects in general. The fundamental objective of this undertaking work will be to discover and classify the necessary challenges of construction initiatives in the case of the Commercial Bank of Ethiopia Headquarters building projects in Addis Ababa.

1.2. Background of the study

Building construction is well-defined as the course of constructing buildings for various purposes. These may be housing, commercial, educational or granary buildings. When the growth of a country increases, the standard of living of the people also increases, and the demand for buildings for several purposes increases. The building plays a significant role in the development of any country, from a shelter to a store. Construction of a building is capital, labor, material, and equipment-intensive process. To achieve the desired result, the above resources must be combined. This integration requires customer satisfaction based on the specifications, drawings, and contracts that have been established. (Shambel G., Shakil S. Dixit P. 2018)

The construction industry is a crucial economic sector that permeates most other sectors, as it transforms various resources into constructed physical economic, and social infrastructure necessary for socio-economic development (Ogunde A et al., 2017). It contributes immensely to the socio-economic development of any country (Carole Veitch, 2018). It provides the foundation on which other sectors can develop by building the physical facilities necessary for the production and distribution of goods and services (Nega F., 2008).

The publics' ultimatum for development is inexhaustible, and economic growth is considered a principal factor in the characteristics of development. Governments devour enormous resources to facilitate and build public infrastructure to support and accelerate their economic growth. Public infrastructure, including building projects, plays a vital role, especially in developing countries; it promotes a country's economic success and enables it to grow and become more viable and competitive in global markets.

Although, the construction sector is a rapidly growing industry worldwide. In Nigeria, time and cost overruns have been identified as the most critical factors responsible for contractor abandonment and failure (Elinwa and Uba, 2001). Nonetheless the Indian construction industry has become very important in recent times due to the opening of Indian markets and the arrival of mega infrastructure development projects, the performance of Indian construction projects is not industrialized as expected.

The sector plays an essential role in the economic development of the country by creating jobs, meeting the demand of the population, and improving their standard of living. In Ethiopia, building construction is growing very snappy and transforming the country's image, especially in the last two decades. The country is paying special attention to the construction industry, such as bridges, roads, airport terminals, dams, and high-rise buildings. (Shambel G., Shakil S. Dixit P. 2018). In Ethiopia it has expanded rapidly, accounting for a sizable share of the country's GDP and being a key component of gross domestic capital formation (Carole Veitch, 2018).

The construction industry is made up of different sectors. These include the building and residential development sector, the civil engineering sector, the professional services sector, and the self-build sector. The construction industry consists of distinct types and sizes of firms. They operate in the various sub-markets that characterize the construction industry.

Construction companies must be registered and licensed to undertake construction work in Ethiopia. Firms are classified according to size, expertise, and financial capacity by the Ministry of Labor and Urban Development (MWUD). (Alem T. 2013).

Construction industry's importance derives largely from the direct and indirect impact it has on all economic activities. It contributes to national production and stimulates the growth of other sectors through a complex system of links. It is noted that approximately one-tenth of the world economy is devoted to the construction and operation of housing and offices (UNEP, 1996). UNEP also notes that industry consumes between one-sixth and one-half of the world's energy consumption.

It consumes between one-sixth and one-half of the world's timber, minerals, water and energy. It contributes to employment and creates income for the population and has multiple effects on the economy. The construction industry employs a large amount of unskilled labor. Throughout the developing world, the majority of employees in the industry are unskilled. Women are also

Like all other socio-economic activities, another key contribution of the construction industry is the generation of revenue for the government. The construction industry contributes to economic activity by generating revenue for the government from corporate income taxes, rental income, sales taxes, capital gains taxes and employee income taxes.

The construction sector also generates revenues from the people employed in the construction sector, which in turn is used to fund public services such as schools and health care facilities, among others. The construction sector makes a significant contribution to the Ethiopian economy, as evidenced by its share of GDP. share of GDP.

Project management is a specialised management technique needed to plan, organise and control projects under a single point of responsibility (A. O. Gwaya, S. M. Masu, and G. Wanyona, 2014). According to (T. D. King, 2015) project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. On the contrary, the absence of good project management by owners or contractors on projects leads to construction delays and additional costs. (A. A. E. Othman, 2015)

The construction industry is complex in nature as it includes a large number of parties such as clients, contractors, consultants, stakeholders, shareholders, regulators and others. These partakers influence the performance of projects measured in terms of time, cost, quality, client satisfaction, productivity, and safety. There are multifarious factors that affect construction projects' performance which include: closures, modification of drawings and changes in designs, poor management and guidance, poor relations and coordination, lack of motivation, control, monitoring or decision-making systems, inadequate infrastructure, political problems, cultural problems, and economic conditions (Alias et. al. 2017).

Construction projects are constantly faced with problems related to construction delays (interruptions) and cost overruns, which is a source of apprehension for construction professionals and project developers. Besides, there are a large number of variables involved. (Enshassi et al., 2009)

Challenges can be seen as opportunities for success if they are identified correctly and lessons are learned. Therefore, this project work aims to identify challenges that have occurred in construction projects in order to avoid the same problems occurring in the future.

1.3. Background of the organization

The Commercial Bank of Ethiopia (CBE) is one of the oldest state-owned banks, established in 1942 as a state-owned bank. Since then, CBE has undergone various reforms and mergers to become one of the most reputable and important commercial banks in the country. It has more than 22 million account holders in its more than 1500 branches throughout the country.

The Commercial Bank of Ethiopia has embarked on a unique and monumental venture by building an iconic, state-of-the-art headquarters in Addis Ababa, Ethiopia. The 52-storey building was constructed

The 52-storey building was built by the project contractor, China State Construction Engineering Corporation Ltd (CSCEC Ltd.), which was selected through an international competitive bidding process (ICB). In addition, design review, supervision and contract administration services were contracted to Addis Ababa University and Addis Ababa Institute of Technology (AAU-AAiT).

The new headquarters of the Commercial Bank of Ethiopia, located in the central business district of Addis Ababa, is set against the backdrop of modern Ethiopia's development as a leading and responsible East African nation with a rich cultural and social history and a growing economy. It has a rich cultural and social history and a growing economy.

The complex consists of a high-rise office tower and two low-rise building volumes. The total floor area is estimated at 147,692 m2.

The 52 storey office tower (4B+G+48) contains the Bank's main departments. The low-rise buildings (4B+G+6 &4B+G+8) are mainly conference centres, shopping centres and car parks. It was strongly recommended to include a large public space such as the public square on the site.

Client: Commercial Bank of Ethiopia (CBE)

Consultant: Addis Ababa Institute of Technology (AAU-AAIT)

Contractor: China State Construction Engineering Corporation (CSCEC)

1.4. Statement of the Problem

Nowadays, the construction sectors encounter many challenges. The root causes of building construction challenges can be divided into two categories: internal causes and external causes. (Parvaneh S., 2017). Construction problems are of three types. First, they are increasing costs, time, and quality. Cost increases in construction can be seen in wages, materials and supplies, productivity, time, capital equipment, and inflation. Time problems in building construction are also described as the timely delivery of materials and the timing of supplies. Finally, quality issues in building construction are one of the main challenges, such as design criteria, inspection, lack of skilled workers, supervision, finances, and availability of materials. (Mekonnen A., 2017)

The construction industry is one of the major sectors of the economy identified by the Ethiopian government to foster economic development (EEA, 2018). However, the construction industry in Ethiopia continues to function with inadequate capital, managerial, technical, consulting management, consulting, labor, equipment and safety practices. Since construction projects involve many processes from initiation to completion, it takes several activities at each stage to achieve project goal.

Nevertheless, a building construction project is economical when it is completed on time, within budget, according to specifications, and to stakeholders' satisfaction (Gündüz M, Nielsen Y, Özdemir M., 2013). According to (Yerosan Abera, 2021), in Ethiopia, very few projects are completed on time and within budget as construction projects are exposed to uncertain environments due to factors such as construction complexity.

In recent years, Addis Ababa has seen an increasing growth rate, especially in the construction of roads and buildings. Building hotels and banks are high on the list. Most private banks and the state commercial bank build 20 to 50-storey head offices, which has a significant and consequent impact on the low foreign exchange reserves of the country. Particularly in the case of high-rise construction projects, when the magnitude of the problems increases, the demand for foreign currency increases. Although, the country's foreign exchange reserve is currently low, even for essential commodities and medicines.

Nowadays, the cost of buildings is exceptionally high, especially for high-rise buildings. For example, the new state-of-the-art headquarters of the Commercial Bank of Ethiopia (CBE), inaugurated a few months ago, was built approximately at USD 303.5 million. Unfortunately, to the best of the researcher's knowledge, there is no similar research studied so far on the

significant challenges of high-rise construction projects in the case of commercial banks in Ethiopia.

Thus, the researcher is sought to identify the significant challenges of the head office construction project of the bank in terms of performance, as this encourages the government's efforts to maintain the low foreign exchange reserve of the country and will help other private banks to learn from others misstep. Therefore, this study examines the significant challenges encounter CBE that affect the performance of building projects and provide insights into the subsequent effects of performance, particularly in the case of the commercial bank of Ethiopia headquarters' construction projects in Addis Ababa.

1.5. Research questions

The issues that were addressed in the project work have been summarized in the research questions below to understand better the objectives of the project work or the purpose of the study.

1. What are the major challenges in the performance of construction projects? In the case of commercial bank of Ethiopia headquarters' construction project in Addis Ababa.
2. What are the causes of the building construction management challenges? In the case commercial bank of Ethiopia headquarters' construction project in Addis Ababa.
3. What are the corrective measures to be taken to improve the project performance glitches?

1.6. Objectives of the study

1.6.1. General objective

The overall objective of this project work was to identify and analyze the major challenges affecting building project performance in the case commercial bank of Ethiopia headquarters' construction project in Addis Ababa.

1.6.2. Specific objectives

The specific objectives of the project studies are

1. Identifying the main challenges in the implementation of construction projects in the case of the Commercial Bank of Ethiopia headquarters construction project in Addis Ababa.

2. Identify the causes of the building construction management challenges in the case of the Commercial Bank of Ethiopia headquarters construction project in Addis Ababa.

3. To provide counteractive measures for project performance problems in the case commercial bank of Ethiopia headquarters' construction project in Addis Ababa.

1.7. Significance of the study

The main importance of this project work is to assist stakeholders of CBE HQ construction project by raising awareness and demonstrating the major challenges that influence building project performance in the commercial bank headquarters projects in Addis Ababa. This study will also support the government efforts to maintain the country's foreign exchange reserve and help other bank stakeholders learn from their counterpart failures.

In addition, it will help private bank stakeholders to maintain a better understanding of the consequence and its associated effect on the performance of construction projects as it will help them take corrective measures to prevent mediocre performance of construction projects by eliminating challenges in the project start-up phase.

At the same time, this project work will also be important for future studies as projects are dynamic from time to time due to technology and other constant and unexpected changes, due to this type of evolution, it is essential to constantly study its impact in the future.

1.8. Scope and limitation of the study

The project study is limited both in terms of issues and geographical coverage. It would not be possible to cover all parts of Ethiopia for time, cost and accessibility; the study will therefore be limited to the construction project of the Commercial Bank of Ethiopia's headquarters in Addis Ababa.

1.9. Organization of the study

The researcher will explain the central idea of the project work and the purpose of the study in the first chapter. A discussion on the reviewed literature concerning the notion of the project work is in the second chapter.

The research methodology, which includes the methods of data collection and analysis and the approach and design of the study, will be discussed in the third chapter.

The recommendations will follow the analysis of the research results in the fourth chapter, and the conclusion will also be provided in the fifth chapter.

The last chapter will list all the sources consulted during the working process of the project. The appendices will also include critical data and information about the project work.

CHAPTER TWO: LITERATURE REVIEW

2. Introduction

This chapter provides a foundation for studying the topic and its concepts. It then focuses on reviewing empirical studies and the general literature on the challenges of construction projects worldwide. It also highlights the theories that guide the study and thus explains the gaps in the research, after which it presents the conclusion on the empirical literature.

2.1. Concept of Consturction Projects

Construction projects have different problems and requirements, either by themselves or by nature, and it is important to take measures and interventions to improve the performance of construction projects. Experts and relevant organizations recognize the importance of using different models and research and development for construction projects to control time and cost overruns, and for socio-economic development. At the same time, for continuous improvement of performance, different countries organize institutions or agencies for further studies and monitoring of construction projects.

Building construction is one of the key industries for social and economic growth. In addition, the industry employs many workers, heavy types of machinery and quality equipment, and uses significant resources. Due to the presence of many stakeholders such as clients, contractors, consultants, users and suppliers, and government offices, the sector faces various challenges.

This chapter will present a literature review of research conducted by various researchers in the building project field. This review will include a theoretical review, a conceptual framework, an empirical review, a critique of the existing literature relevant to the study, a summary, and research gaps.

2.2. Theoretical literature review

2.2.1. Building construction projects

A construction, in simple terms, is a process of building something by a human for one purpose or another. It can be a road, bridge, dam, private residence, airport, commercial building, office, etc. According to Wikipedia, construction is the process of building or assembling infrastructure. Construction involves the recruitment and use of capital, specialized personnel, materials and equipment on a

a specific site according to drawings, specifications and contract documents prepared to meet a client's needs. According to Moavenzdadeh F. (1976), construction contributes to the economic development of any country by meeting some of the basic development objectives, including production, employment creation, income generation and redistribution.

Construction also contributes to basic physical and social needs, including the production of shelter, infrastructure and consumer goods.

2.2.2. Construction in Ethiopia

Ethiopia is a country located in the Horn of Africa. It is a large country with an area of 1.13 million square kilometers. Ethiopia is home to a large population of inhabitants, according to a report by self-help Africa, 2013, these amount to about 91 million. The average number of inhabitants per square kilometer can be estimated at about 80 people.

According to Alem T. (1999), the majority of the Ethiopian population lives in the rural areas of the country. and only a few live in the urban areas.

From the above statements, it can be observed that the construction industry is only limited to a small part of the country, as the majority of construction is done in the urban areas. The rural area, where the majority of the population lives, is not civilized, i.e. there are only small traditional buildings used for housing people and livestock.

health centres. According to Abraham A., 2007 and Kassim S., 2008, the construction industry is the most important catalyst for economic growth. According to Abraham A., 2007 and Kassim S., 2008, the construction industry is the most important factor for overall development, especially for least developed countries like Ethiopia. developing countries like Ethiopia. They also state that the construction industry is one of the major employments generating industries and contributes to the national development of any country.

2.2.3. The extent of the problem in some developing countries

A study of cost and schedule overruns in Malaysia indicates that the Malaysian construction sector is characterized by the poor performance that does not lead to efficient time and cost results (I. A. Rahman, 2012).

This study revealed that 92% of construction projects were overrun, and only 8% of projects could be completed within the contracted timeframe. Only 8% of the projects were completed within the contractual timeframe. Furthermore, only 11% of the respondents mentioned that

their projects are typically completed within the contracted cost in terms of cost performance. In comparison, 89% of the respondents agreed that their projects face time and cost overruns in 5-10% of the contract.

Another study in Malaysia concluded that only 46.8% and 37.2% of public and private sector projects are completed within budget. The study by G. de Jong, H. Gunn, and W. Walker, also supports the same idea: 9 out of 10 transport infrastructure projects are underestimated, and for all types of projects, the costs of the projects are underestimated (I. R. Endut et al., 2005).

For all types of projects, actual costs are, on average, 28% higher than estimated costs. The situation seems to be worse in India, where studies of construction projects found that more than 60% of projects experienced a 200% time overrun and a 750% cost overrun (E. E. Rwakarehe and D. A. Mfinanga, 2014).

2.2.4. The extent of the problem in selected African countries

Most of these challenges are observed in many developing African countries such as Nigeria, Kenya, Ghana, Uganda and Tanzania. In Tanzania, E. E. Rwakarehe and D. A. Mfinanga found that the total cost and time overrun rates averaged 44% and 26%, respectively, considering seven countries. In Tanzania, they found that total costs and time overrun rates averaged 44% and 26%, respectively, considering seven projects. The authors also identified that among other factors, the average contribution of the preliminary design was 26% and 32%, respectively, and the extent to which inadequate design contributed, in percentage terms, to cost and time overruns was 61% and 85%, respectively.

The case of the Ghanaian construction industry, as highlighted by G. Ofori, also exhibits many of the characteristics of construction industries in developing countries. According to the author, the performance of the industry's performance in most areas, such as cost, time, quality, safety and health of its workers, sustainability of its products and satisfaction of its stakeholders, is inadequate. The satisfaction of its stakeholders is inadequate.

The Nigerian construction industry is also grappling with many inherent challenges, ranging from inadequate technical and managerial know-how to inadequate financial, material, capital, and equipment (R. Isa, et al., 2013). A study on the assessment of management challenges facing the construction industry in Nigeria also revealed that time, cost, quality and safety remain the major management challenges facing construction managers in Nigeria (P. U. Okoye, et al., 2015).

The case of Kenya is not unlike that of most other African countries. The industry is faced with many challenges such as over-expenditure, delays in project completion, construction defects and over-reliance on foreign workers. Construction defects and over-reliance on foreign workers. Most construction projects, especially road infrastructure in Kenya, are exposed to an extreme escalation of costs.

Most construction projects, especially road infrastructure in Kenya, are exposed to extreme cost escalation to the extent that they require additional funding and specialized expertise, leading to technical and project management conflicts between the project parties (A. O. Gwaya, et al., 2014).

On the other hand, in his study in Botswana, D. K. Chimwaso found that seven out of ten public projects had cost overruns, with variations, remeasurement of interim works, contractual claims and fluctuations in the cost of labor and materials the most significant. He also cited a recent study where only 16% of projects were considered successful (i.e., completed on time, on budget and to specification).

2.3. Empirical literature review

According to (Shaban, 2008) in his thesis on the factors affecting the performance of construction projects in the Gaza Strip, found that the most important factors that owners, consultants and contractors focused on were: the average delay due to closure and shortage of materials, the availability of resources as planned during the project period, the leadership skills of the project manager, the escalation of material prices, the availability of people with high experience and qualification, and the quality of equipment and raw materials. The quality of equipment and raw materials in the project. Bui and Ling, (2010) in the study conducted in Vietnam on the factors affecting the outcome of construction projects found that the main factors for the success of a project are the involvement of foreign experts, the inspection of the project and the quality of equipment and raw materials.

The lack of accurate project performance data is an important factor in project success. The lack of accurate performance data is the lack of accurate soil, weather and traffic data. Amusan, (2011) studied the factors affecting construction cost performance on Nigerian construction sites. The analysis revealed that factors such as contractor's inexperience, inadequate planning, inflation, incessant change orders and changes in project design are critical factors in cost overruns, while project complexity, shortened project period and fraudulent practices are also responsible.

CHAPTER THREE: METHODOLOGY

3. Introduction

This chapter covers all the information about the methods that was used to carry out the research, the type of research design used, the target population, the sample size, the sample size techniques, the sampling techniques, the procedure that was used to obtain the samples, and the research instrument and data collection method. It also indicates how the data was analyzed and presented.

3.1. Research Design

The research tried to explore, examine and identify the major problems of building projects that affects its performance and it implements more of descriptive, exploratory and the researcher used quantitative approach.

3.2. Source of data

To achieve the objective and answer the research questions of the study, different sources of data was used. The primary data sources are the questionnaire, and the site observation. To collect secondary data, literature and archival documents was used.

3.3. Population of the study

A population is the group of units on which the researcher wants to make judgments. These units can be groups of individuals, customers, companies or products (Mooi and Sarstedt 2011). Grove and Buns (2003) stated that a population must have a certain characteristic to be included in a study.

The populations that were used in this research are the professionals involved in the construction project of the recently inaugurated headquarters of the Commercial Bank of Ethiopia and its registered consultant and contractor. In addition, incalculable professionals participated in the project. However, for the researcher convenience and based on their crucialness for this project only 150 was considered as a population.

3.4. Sampling process and sample size

The purpose of sampling is to provide a practical means of enabling the data collection and processing components of the research to be carried out while ensuring that the sample provides a good representation of the population (Fellows & Liu, 1997). Waliman (2005) states that samples must be free of bias. Otherwise, the type of sample selected will greatly affect the

reliability of the subsequent generalization. Sampling strategies are classified into two main groups, namely probable and non-probable sampling (Blaxter et al). Therefore, for this project work, both sampling strategies was used.

3.5. Determination of the Sample Size

The term "sample" has been described differently by various scholars. Kombo and Orodho (2002) define a sample as a finite and to represent the number objects in the study population. Gerstman (2003) a sample is required so as to save on money and reduce time waste. According to Gupta (1994), in the census method, we resort to 100% inspection of the population and enumerate each

and every activity; therefore, it provides more exact information compared to the sample enumeration, which involves drawing a representative and adequate fraction of the population. A

census approach therefore conducts more detailed and extensive studies.

For this study, the sample size is very important and essential to get a proper result. For deciding

the sample size, applying formulas to calculate a sample size (Yamane, 1967 simplified formula

to calculate a sample size).

n=N/1+N(e)2=150/1+150(0.05)2=110

3.6. Sampling technique

The systematic random sampling technique was used for data collection. This technique was used to select the samples. By using this system, it helps the researcher to select the sample quickly and efficiently. It also makes the sample unbiased by using the system to select the sample. It also ensures that the population was sampled equally by using an interval to select the sample rather than a blind system. The questionnaires were distributed to contractors in their offices and on their sites, to consultants in their project offices and to clients in their offices. The data collection was facilitated by the great support of the client, Commercial Bank of Ethiopia project office teams.

The above-mentioned sample of 110 individuals was randomly assigned to 35 contractor representatives, 10 consultant representatives, and the remaining client representatives from the CBE project office.

3.7. Data processing and analysis

Questionnaires provide first-hand information about the subject of a research, as they are question-oriented and also serve as a survey to understand the main concerns and attitudes of the respondents towards the issues. In this thesis, a questionnaire, crafted by (Mekonnen, 2017), was administered to randomly selected actors in the construction industry, such as a contractor and a consultant.

For the purpose of this project, a random sampling of the organization's professionals was conducted and copies of the questionnaire was distributed.

The research will attempt to address most of the issues relevant to the study, which will allow for an appreciation of all the issues involved in the topic. A descriptive statistical method will be used for the analysis of the data that provides an overview of the results to allow for interpretations and discussions of the results.

A descriptive statistical method was used for the analysis of the data which provides an overview of the results in order to allow for interpretations and discussions of the results. In addition, the literature reviewed was also be used as one of the main pillars of the analysis of the results. To summaries the collected data and to determine the number of responses belonging to each category, frequency tables and graphs was used.

CHAPTER FOUR RESULTS AND DISCUSSION

4. Introduction

This chapter is classified into four parts in accordance with the objectives of this project. This classification helps to achieve the project objectives that are mentioned in the introductory chapter of this project work. The first part discusses the results of the questions asked to the sampled contractors to identify their level of awareness of building construction management, such as overall management process, time management, cost management, and quality management. The second part highlights the results of questions addressed to the sample consultants to identify construction management control issues related to planning, materials management, quality management, poor execution, project administration, and contract management failure. The third part focuses on the questions addressed to the client to identify general building construction management problems and the results are discussed in detail. The fourth part of this section attempts to present the summary of the results and discussions.

4.1. Questionnaire Return Rate

110 questionnaires were administered as part of the study. 101 were fully completed and returned, for a response rate of 91.81%. Babbie, E. (2004) classified the return rate of 50% as acceptable for publication and analysis, 60% as good, and 70% as extremely good. Thus, the return rate of 91.81% was beyond extremely good.

Responses	Frequency	Percentage
Returned	101	91.81 %
Unreturned	9	8.19 %
Total	110	100 %

4.2. Results and desucssion

Research results: the technical results and scientific knowledge resulting from the implementation of research projects in accordance with this Agreement, including all inventions, ideas, designs, literary works, algorithms, and technological developments, such as programs, that may execute the algorithm(s).

4.3. Constructors

According to Wikipedia, building construction is the process of adding a structure with walls to a property or constructing buildings. It states that if these buildings are not designed and constructed by professionals, they can lead to undesirable results such as physical collapse, cost overruns and litigation.

According to experts, a contractor can be defined as a person or organization responsible for assembling the materials and components necessary to produce the facility or perform the work. Like the employer and engineer, the contractor is also identified in public works contracts as a person or persons, firm, or corporation awarded the contract by the employer, including its personal representatives, successors, and permitted assigns [United Nations Industrial Development Organization (1969), ATKINSON A.V. (1992), MoWUD (1994), and DAVID M. (2004)].

4.3.1. Building Construction Project Time Management

According to the literature, time management in a construction project is crucial to accomplish the project within the specified time frame and it also has an implication on the contractors' ability to perform. Time management is the process of organizing and implementing a strategy related to the time required for work activities on a project. Effective time management is essential for success and efficiency. Time management literature indicates that time management is essential for setting milestones and deadlines, allocating resources, and determining contract price and cash flow requirements. Therefore, contractors are expected to be aware of time management.

In this section, respondents were asked if their organization was aware of the importance of time management in construction. The responses from these respondents revealed that most organizations were aware of the importance of time management in construction. Table 2 below shows the respondents' responses to the question of whether or not they were aware of the concept of time management in construction. Of the 35 respondents, 24 (68%) were aware of construction time management. This implies that most contractors, 68%, are familiar with construction time management in building. Effectively meet budget and program goals, as well as profitability.

Table 2 Awareness made about the importance of Building Construction Project time Management

Response for awareness made about the importance of time management	**Frequency**	**Percentage**
Yes	24	68 %
No	11	31 %
I do not know	0	0%
Total	35	100 %

Source: data from questionnaires 2022

To identify the efforts made by the respective organizations, whether formally or informally, the researcher asked the respondents in what way they made efforts. Out of all the respondents, 30 (85%) answered that the efforts made to manage time in building construction were made in a formal way. Table 3 reveals the results of the responses. This indicates that organizations used formal time management procedures to complete their tasks and responsibilities.

Table 3 Effort made for formal time management of building construction

Responses for efforts made for formal time management.	**Frequency**	**Percentage**
Yes	30	85 %
No	5	15 %
I do not know	0	0%
Total	35	100 %

Source: data from questionnaires 2022

As it is known, time management efforts in building construction must be formal, which was already confirmed by the respondents. The researcher tried to determine whether the organization had prepared a schedule (plan) for the project or not. Planning plays an important role in the construction sectors. The results of the research show that about 33 (95%) of the contractors prepared a schedule (plan) for the project; the other 2 (5%) did not prepare a schedule (plan) for the project in order to achieve the time management objective of the project.

Table 4 Use of the WBS when defining the schedule activities

Responses for the use of the WBS when defining the schedule activities.	**Frequency**	**Percentage**
Yes	33	95 %
No	2	5 %
I do not know	0	0%
Total	35	100 %

Source: data from questionnaires 2022

In order to have a formal schedule/planning of the various activities for planned building construction projects, a detailed work breakdown structure (WBS) must be developed. Table 4 indicates that organizations use the WBS to define schedule activities. Of the total respondents, 33 (95%) use the WBS to define planning/scheduling activities. This implies that most organizations use the WBS to implement the scheduled activities accordingly.

In the process of constructing a building, i.e. the actual implementation of the work breakdown structures already identified and scheduled by the contractors, the progress of the project management activities must be continuously monitored and controlled according to the developed schedule/plan. This is to prevent problems that will occur during the actual work, such as delays, complaints, claims, and other related issues. Therefore, the researcher tried to find the practice of monitoring and controlling the activities of the prepared work breakdown structures in the sample organizations. As we live in a dynamic world, there are always changes. This situation also applies to the construction industry. Some of the factors of these sudden changes in the construction industries are weather conditions, political conditions, environmental conditions and other related issues. These situations have a direct impact on the performance/progress of construction projects that have already developed a work breakdown structure. Therefore, the researcher tried to explore whether organizations need to update construction project schedules based on the changes or not. In Table 5 below, 25 (70%) of the respondents update their schedules, 5 (15%) of the respondents do not update their schedules, and the remaining 5 (15%) have no idea about updating the schedules. This result indicates that the majority of the organizations used updating their calendars based on changes in the business process, which is appreciable.

Table 5 Organization update the building construction project schedule.

Responses for update the building construction project schedule	**Frequency**	**Percentage**
Yes	25	70 %
No	5	15 %
I do not know	5	15 %
Total	35	100 %

Source: data from questionnaires 2022

4.3.2. Building Construction Project Cost Management

Construction cost is the cost of the entire construction engineering, which means that the construction company considers the construction project as an accounting goal, including the consumption of materials, components and equipment, the depreciation charge and machinery rental charges, wages and bonuses given to workers and all expenses of the construction organization. The construction cost of a project is the main cost of a project. According to the literature, cost management, if managed properly, plays an important role in the success of construction projects.

It is mandatory to estimate the amount of project cost based on the items prepared for the given construction projects. Organizations/contractors engaged in the construction of different buildings in the study site were asked whether they had prepared a project cost estimate or not. Of the total respondents, 33 (95%) of them had prepared a cost estimate for each element and 2 (5%) of them had not prepared a cost estimate for each element. This result is shown in Table 6 below. The results tell us that the preparation of cost estimates for each element to complete the building construction project was clearly undertaken by a large number of organizations/contractors.

Table 6 Prepared project cost estimation by the organizations

Response for prepared project cost estimation by the organizations	**Frequency**	**Percentage**
Yes	33	95 %
No	2	5 %
I do not know	0	0 %
Total	35	100 %

Source: data from questionnaires 2022

It is very important to know the cost management in order to correctly use the budget allocated to the specific project activities. The client allocates the budget for each project based on the prepared activities, i.e. work breakdown structures. If there are well-structured and applicable work breakdown structures prepared by the organizations/contractors, it will be too simple to manage the budget/cost flow for each activity accordingly. Therefore, it was important to survey organizations that use work breakdown structures to estimate project cost or do not use them to properly manage costs. Of the 35 respondents, 35 (100%) of them used work breakdown structures to estimate project cost and 0 (0%) of them did not. Table 7 shows the result.

Table 7 The work breakdown structures to estimate the project cost by the organizations

Response for the work breakdown structures to estimate the project cost by the organizations	**Frequency**	**Percentage**
Yes	35	100 %
No	0	0 %
I do not know	0	0 %
Total	35	100 %

Source: data from questionnaires 2022

Formulating work breakdown structures, estimating project costs, and regularly updating the budget are not enough to ensure the success of construction projects. These actions must be supported by continuous monitoring and control mechanisms of the project cost by the organizations/contractors. Indeed, it is believed that proper monitoring and control of project costs allows for effective and efficient use of resources allocated to all project activities. Thus, all organizations/contractors need to implement this fundamental feature of the construction project in their activities. Of the 35 respondents, 33 (95%) of them have made an effort to monitor and control the project cost in their organization and 2 (5%) of them have not made such efforts. The remaining 0 (0%) of the respondents did not know how to monitor and control project cost. The results of the respondents are presented in Table 8 below. The implications of this result indicate that the efforts made for monitoring and controlling the project cost is a fundamental issue for the success of construction projects because most of the respondents made an effort.

Table 8 Effort made to monitor and control the project cost by the organizations

Response for effort made to monitor and control the project cost by the organizations	**Frequency**	**Percentage**
Yes	33	95 %
No	2	5 %
I do not know	0	0 %
Total	35	100 %

Source: data from questionnaires 2022

4.3.3. Building Construction Project Quality Management

Quality control in construction generally involves ensuring that minimum material and manufacturing standards are met to ensure that the facility performs according to its design. With respect to quality, the literature indicates that a variety of different organizations are responsible for quality control and safety during construction. A common pattern is to have one group responsible for quality assurance and another group primarily responsible for safety within an organization. In larger organizations, departments dedicated to quality assurance and

safety may designate specific individuals to assume responsibility for these functions on particular projects.

Based on the above paragraphs, quality management in the construction industry will result in quality products if they are properly used by contractors. Based on this fact, the researcher asked the respondents about different points regarding quality management in construction that they use in their organizations.

The following question was asked to the respondents, -Does your organization perform building construction quality planning for the given project, which means determining the quality requirements and standards and strategies to achieve the quality goals? I. For this question, of the total respondents, 30 (85%) answered -Yes and 5 (15%) answered -No. The remaining 0 (0%) did not know about quality planning for the given project. The implication of the result reveals that most organizations have the practice of quality planning for the success of the objectives.

The preparation and implementation of quality management policies, procedures, and guidelines in the building construction industry is a primary task for any organization that wishes to be competent in this industry. Indeed, quality is important to the building construction sectors and, in addition, customers need to have quality products. Therefore, the respondents were asked about the preparation and implementation of quality management policies, procedures, and guidelines in building construction. Their responses are presented in Table 9 below. The result of the response indicates that 30 (85%) of them prepare and implement construction quality management policies, procedures and guidelines, 5 (15%) of them do not prepare and implement construction quality management policies, procedures and guidelines and 0 (0%) does not know. This means that there is a good practice of these activities, i.e. preparation and implementation of construction quality management policies, procedures and guidelines.

Table 9 Preparing and implementing building construction quality management policies, procedures and guidelines

Response for preparing and implementing building construction quality management policies, procedures and guidelines by the organizations	**Frequency**	**Percentage**
Yes	30	85 %
No	5	15 %
I do not know	0	0 %
Total	35	100 %

Source: data from questionnaires 2022

In order to achieve the required quality of the products in accordance with the contractual agreement between the customer and the contractors, there must be a responsible quality control department and adequate personnel assigned or hired in this organization. For the customers, quality issues should not be compromised. To find out whether the sampled organizations/contractors have assigned/hired employees to provide quality product to the customer or not, the researcher surveyed the contractors. The results of the respondents are presented in Table 10 below. Out of the 35 respondents, 33 (95%) had hired/assigned a quality department or employees in their organization and 2 (5%) of them had not hired/assigned a quality department or employees; the rest, 0 (0%), did not know about the issue. From the results, it can be observed that most of the organizations/contractors have hired/assigned a department or employees responsible for quality control.

Table 10 Hiring/assigning a quality department or employees by the organization

Response for Hiring/assigning a quality department or employees by the organizations	**Frequency**	**Percentage**
Yes	33	95 %
No	2	5 %
I do not know	0	0 %
Total	35	100 %

Source: data from questionnaires 2022

4.4. Consultants

In the literature, consultants have been described as a person who provides professional or expert advice in a particular field of science or business to an organization or individual. Since the title of "consultant" has no legal protection, in theory, anyone can wake up one day and decide to adopt this title. In spite of the wide definition of the term "consultant", there are essentially three characteristics which distinguish the consultant from the other professions.

Clients hire consultants for the following reasons:

- Consultants are independent and provide an objective view of dilemmas and solutions
- External consultants are less sensitive to internal politics and/or sensitive situations
- In some areas, it may be more economical to hire consultants than to keep the expertise in-house when companies run out of capacity for projects/positions, consultants can fill in.

The main tasks of the consultants are preparation of plans and specifications, preparation of bidding documents in accordance with the PPA, supervision of construction activities, preparation of payment certificates for the contractors in accordance with the contractual agreement, reporting the overall activities to the clients in a timely manner, and other related activities.

In this section, the researcher took ten out of various consultant representatives who were engaged in the consulting services on behalf of the client and they were asked through open-ended questions about the main issues that were manifested by all stakeholders (clients, contractors, and consultants) and considered as the challenges of construction management in building construction projects at the study site such as planning/programming, preparation of designs and specifications, quality and materials management, human resources management, construction project supervision, payment preparation, project administration and contract management and finally, they were asked to provide possible solutions for the problems. The results of the questionnaire have been discussed below.

4.4.1. Planning/scheduling of the program

During the planning and scheduling stage, all work activities must be well understood and planned in detail to optimize resource allocation and reduce the risk of unknowns. It is then possible to estimate how much time each activity will take. With respect to program planning/programming, respondents reported the following problems.

- There was detailed program planning/programming but it was not sufficient. Program planning was more wide-ranging.
- Program planning/programming from documents was reliable and predictable.
- Due to inadequate planning documentation, contractors did not continuously stay on schedule.
- Most of the time, contractors were guided by the planning/scheduling. This resulted in project interruptions, as observed in the project action plan.
- One of the challenges was the COVID-19 pandemic and the soaring price of building materials in the international markets.

4.4.2. Preparation of designs and specifications

The literature section discussed specifications as general workmanship specifications that are available in many fields and are published by organizations such as the American Society for Testing and Materials (ASTM), the American National Standards Institute (ANSI), or the Construction Specifications Institute (CSI). Separate specifications are formalized for particular types of construction activities, such as the welding standards published by the American Welding Society, or for particular types of facilities, such as the Standard Specifications for Highway Bridges published by the American Association of State Highway and Transportation Officials. These general specifications should be modified to reflect local

conditions, policies, available materials, local regulations and other special circumstances. (Skibniewski, M. and Hendrickson, C., 1983)

At the beginning of the establishment of the project that is located in Addis Ababa, capital of Ethiopia, with a total construction area of 160,000㎡, including a tower (G + 48 floors), 4 floors underground, its building designs and specifications were prepared by the consultant called MH-Engineering plc and the designs were low cost housing typologies. The consultants responded that they, in turn, had prepared a design and specifications that met the standards for the new buildings. In addition, once the plans were prepared, the client involved evaluates the plans by their staff and other high-level professionals, and then the plans and specifications are implemented.

4.4.3. Quality and material management

In the literature, the part of quality management described as quality control in construction generally involves ensuring compliance with minimum material and manufacturing standards to ensure that the facility performs as designed. In large organizations, departments dedicated to quality assurance and safety may designate specific individuals to assume responsibility for these functions on particular projects. Workmanship specifications are an important feature of facility design. Specifications for quality and required components are part of the documentation needed to describe a facility. In general, this documentation includes all special provisions of the facility design as well as references to generally accepted specifications that will be used during construction. (Hinze, Jimmie W, 1997)

The respondent's responses to these issues were as follows:

- The sample building materials submitted by the contractors used for construction were of very expensive but they were standardized.
- Building materials used for construction were not delivered on time by the client due to different factor including the transportation delay, COVID 19 pandemic and price escalation in the international market.
- Sub-standard contract relationship management practices
- Inadequate storage systems for construction materials, which resulted in lower quality materials.

4.4.4. The possible solutions for the above problems

The sampled consultants proposed the following possible solutions.

- In the preconstruction phase, all necessary documents should be prepared, i.e., designs and specifications as well as standard bidding documents.
- Claims arising from the building construction project must be handled in a timely manner and in accordance with agreed upon dispute resolution mechanisms.
- The materials and work deployed shall be in accordance with the signed contractual agreement.
- The contractual agreement must be properly prepared and implemented accordingly.

Steps must be taken to resolve problems.

- Improve documentation systems.
- Good relationships between stakeholders (clients, contractors, and consultants) need to be established.

4.5. Client

In the literature, it is worth mentioning that in many asset transfers projects, the role of the client may also be divided. Projects may have different stakeholders and funders, each with different requirements to be involved in the development and construction process. It may be useful to look specifically at the implications for the project of who assumes the roles of "Client" and "Employer" at the construction stage.

The client plays an important role in the process as they will appoint consultants, authorize work, agree on costs and schedule, and appoint professionals to the project. In some projects, the client is an organization or community group, but may have difficulty assuming the role of employer due to its responsibilities. The client has the following role:

Be responsible for the execution of the project from initial idea to implementation.

- Choose the actors involved in all stages, from design to construction to long-term management.
- Long-term management.
    - Ensure that the needs of the building's users/clients are met.
    - Ensure that the necessary approvals are obtained (planning, etc.) in partnership with the project's designated professionals.
- The professionals assigned to the project.
    - May also be the financier and eventual owner of the project.

The client is one of the stakeholders who own the project after the projects are completed. The owners can be individuals, governments, institutions, etc. In this project work, the client of the building construction project is the Commercial Bank of Ethiopia (CBE).

4.5.1. Time / Schedule, Quality and Time

The office responsible for managing these projects is the project office of the Commercial Bank of Ethiopia (CBE).

As the researcher collected a number of information from the contractors and consultants using different data collection tools, it was also essential to collect information from the client to get a clear picture of the overall building construction processes in the study area.

To this end, the researcher cross-examined the CBE project office staff and asked open-ended questions focused on the general challenges of building construction management observed by all stakeholders. The main challenges/problems mentioned are listed below.

- The serious problems of human resources management.
- Lack of time management concepts by project enablers.
- Lack of quality management concepts and production of poor-quality products/buildings.
- Although contractors have work breakdown structures (WBS), it was not in an organized manner and they did not execute the WBS accordingly.
- Contractors have good plans/schedules, but there is a language barrier.
- High turnover of contractor personnel due to failure to make payments to workers and lack of replacement.
- Misunderstanding of construction work.
- Consultants did not fully interpret the work breakdown structures in detail and did not strictly monitor/supervise the construction work and take necessary actions. This was due to capacity issues.
- Poor decision-making process for the execution of construction projects on time.
- Poor communication between stakeholders.

4.5.2. Possible solutions forwarded by the stakeholders

As discussed above, the stakeholders proposed the following possible solutions.

- In the pre-construction phase, all necessary documents should be prepared, i.e. drawings and specifications as well as standard bid documents.
- Claims arising from the construction project should be handled in a timely manner and in accordance with agreed upon dispute resolution mechanisms.
- Materials and workmanship shall be in accordance with the signed contract agreement.
- The contract agreement shall be properly prepared and implemented accordingly.
- A trained professional staff on the client side is helpful to manage and control the overall progress of the projects.
- Improve standardize documentation systems and increase the technological capacity and knowledge.
- Good stakeholder relationships (clients, contractors, and consultants) should be established.
- Build stakeholder capacity in terms of attitude, skills, and knowledge of the entire building construction project.
- Stakeholders should have their own means of transportation (services) to frequently monitor the progress of the project.
- Be more proactive than reactive in terms of cost estimation, safety, monitoring and quality management.
- Improve language skills as the contractors are mainly from abroad.

CHAPTER FIVE CONCLUSIONS AND RECOMMENDATIONS

5. Introduction

To conduct this project work, the researcher raised three fundamental questions and also set the following objectives: Identify the main challenges in the implementation of construction projects; Identify key performance indicators; Identify different types of construction management challenges; Identify the causes of construction management challenges; and Provide counterproductive measures for project performance problems.

The literature review portion of this study focused on construction in general. Building construction is a complex set of interrelated activities that some would describe as organized chaos.

The very nature of construction presents challenges not typically encountered in other industries. It was also noted that the various management issues in building construction, such as human resource management, time management, cost management, quality control management, procurement management and other related issues.

Most of the building construction projects in Ethiopia do not achieve their objectives and the questionnaire was developed to determine if there are serious building construction management problems in this sector. The developed questionnaires (closed and open-ended) and secondary data were supposed to cover all the basic research questions that were useful to answer the research questions.

The results of the questionnaires and the discussion of the findings were presented based on the literature review in the previous section. In this section, the conclusions drawn from the research findings and recommendations are presented.

The main challenges of the CBE construction project are listed below;

- ✓ Quality management, price escalation in the international market, COVID-19 pandemic, time management and foreign currency shortage.

The main causes for the construction project challenge for the project under study;

- ✓ The causes are lack of experts, lack of foreign currency, lack of technological advances and in general lack of resources.
- ✓ The main causes for the construction project challenge for the project under study;

The corrective measure to be taken in order to improve the challenges of the construction project is summarized for the project under study;

- ✓ Appropriate training for project facilitators, improve documentation systems, improve communications skills, improve control management, improve research (evidence)-based management (Scientific project management).

5.1. Conclusions

Whether you are at the beginning of your career in project management or have a lot of experience, you will agree that being a project manager is not easy. You need to constantly stay on top of your game by learning the basics of project management and making sure the project stays within agreed-upon boundaries, such as

- ➢ Time
- ➢ Project scope
- ➢ Budget and Quality.

Despite the availability of numerous resources, project management tools, training materials, and flexible methodologies, organizations waste millions of dollars each year struggling to overcome project management challenges and issues. The main idea of this project work can be summarized as follows;

- ✓ In terms of challenges, the study identified ***time, cost and quality management*** as the biggest challenges for professionals in managing their daily work. Assessing the extent of deviation from plans or established requirements in these areas supports this finding.
- ✓ Thus, more than average contractors involved in building construction projects are aware of construction management resources such as cost, time, and quality management; and this awareness has been supported by efforts to manage these resources in the practice of construction to make their projects successful.
- ✓ Most contractors have developed ***Work Breakdown Structures (WBS)*** in establishing schedule activities to manage building construction projects in accordance with their contractual agreement.
- ✓ The preparation of a good plan and schedule and then working according to this plan during the construction period are very important for the successful progress of the project.

- ✓ The vertical transportation system is very important for the construction of high-rise buildings. In this project, good planning of vertical transportation system is required to minimize the decrease of work output due to increasing height.
- ✓ The project is very equipment intensive and includes small machines such as plywood cutters to heavy machines, almost all of which are electrically powered.
- ✓ Most contractors have implemented human resource, cost, schedule, and quality and procurement management for the building construction project to achieve the project objectives.
- ✓ As mentioned above, there is no detailed schedule (construction, labor, equipment and material) for the project. But for such a complex project, a detailed schedule is very important for the efficient completion of the project.
- ✓ The most commonly identified challenges in building construction management are poor communication between stakeholders, poor project management due to lack of professional staff in the client's project office, inadequate planning of building construction activities on the client's side, underestimation of projects by the client, problems in time monitoring, capacity problems, COVID-19 pandemic and international market price fluctuation was one of the key challenge during the execution of the project etc.

5.2. Recommendations

The following are the key recommendations that need to be duly addressed in order to overcome the challenges of building management.

- ➢ As a leader or project manager, swift but precise decisions should be made that move the project forward. Therefore, by coordinating actions and getting them approved quickly, the construction projects could be completed on time (perhaps even ahead of schedule) and in some cases, under budget.
- ➢ Capacity building for stakeholders in terms of their attitude, skills and knowledge of the overall building construction projects is indispensable.
- ➢ Being more proactive than reactive in terms of cost estimation, safety, monitoring and quality management in order to increase efficiency and effectiveness.
- ➢ During the project implementation, documents were found showing the non-participation of local subcontractors, but in order to share experience and shorten the project duration, it is good if local contractors participate in the project as

subcontractors, such as hollow concrete, block work, plastering work, floor finishing work and others.

- Frequent monitoring, control, management and evaluation of contractors' performance in building construction projects should be carried out based on the prepared work breakdown structures to avoid problems in building construction management.
- Getting the wrong estimate on a construction job can have huge downsides. Some jobs are stalled for weeks or months, or even dropped altogether. Accurately estimate costs in advance to ensure there is always enough money for materials, wages and more.
- The complaints identified in a building construction project should be dealt with in a timely manner and in accordance with the agreed dispute resolution mechanisms.
- When the right hand isn't talking to the left hand, projects can be delayed and, in some cases, even executed incorrectly. Whether communicating with the owner, the customer, the field or the office, all parties should be kept informed when new updates such as change orders or redesigns, or data such as work progress or labor costs become available.
- Improvement of documentation systems to evaluate the progress of building construction projects.
- In general, in high-rise (skyscraper) building projects, as the size of the problems increases, so does the need for foreign exchange. Therefore, a proactive measure should always be taken and maximum care should be taken to execute the project with minimum and adequate funds.

5.3. Limitations and Directions for Future Studies

This project work aimed to identify and analyze the main challenges affecting the performance of construction projects in the case of the Commercial Bank of Ethiopia headquarters construction project in Addis Ababa. Project works can have certain limitations. It is therefore necessary to recognize these before moving on to generalize the results.

There is a limitation regarding the scope of the study; this project work was conducted to identify problems that arose during the construction of the Commercial Bank of Ethiopia Headquarter building. The study suggests that a similar study can be conducted in other mega-projects in the country, as learning from the problems of previous projects could help save the country's foreign exchange reserves.

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Appendix A

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

Masters of Art in Project Management

Subject: -Request for cooperation

Dear Madam / Sir (Participant)

This questionnaire is designed to identify key construction project challenges in the case of the Commercial Bank of Ethiopia Headquarter project. The information obtained in this questionnaire will be used for academic purposes only; all information and comments will remain strictly confidential. Every response to the questionnaire is valuable and contributes to the study's success.

The researcher believes that this type of study will contribute to the development of the construction sector in Ethiopia while helping the government save the country's foreign exchange reserve. The experience and knowledge of the participants in the construction sector will contribute significantly to the study's success. The researcher, therefore, requests the respondents of this questionnaire to respond to each question carefully and conscientiously. Thank you very much.

Best Regards,

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PART ONE - CONTRACTORS

SECTION ONE: GENERAL PROFILE OF THE RESPONDENT

1.1. **Company's Name**: _____

1.2. **Company's Address**:_____

1.3. **Profession/ job title**: _____

1.4. **Group (Party)** Contractor ☐ Consultant ☐ Other ☐ , Please specify _____

1.5. **Your organization is …**

A. Local private company B. Local government/public enterprise

C. Foreign company D. Joint venture of a local and foreign company

E. Local endowment F. Other (please specify)

1.6. **Have you worked as a Construction Manager?**

A. Yes B. No If yes, for how long? _____

1.7. **What is the category of your organization?**

A. General contractor (GC) B. Building contractor (BC)

C. Road contractor (RC) D. Specialized Contractor (SC)

E. Other (please specify)

1.8. **What is the grade of your organization? ……..**

A. Grade-1(GC1/BC1/RC1) B. Grade-2 (GC2/BC2/RC2)

C. Grade-3(GC3/BC3/RC3) D. Other (please specify) _____

1.9. **Approximately how long has your organization been in the construction sector?**

_____

1.10. **What is the main type of construction that your organization usually does?**

A. Building (residential, office, commercial) B. Road

C. Civil Engineering works (water supply, hydropower etc.)

D. Other (please specify_____

1.11. **Has your company participated in the Capacity Building Programme (CBP)?**

A. Yes B. No C. I do not know

1.12. **Your company is**

A. ISO certified or compliant B. In a process to get the certification

C. Neither ISO certified nor in a process to be certified D. Other (please specify).

SECTION TWO: BUILDING CONSTRUCTION PROJECT TIME MANAGEMENT

2.1. **Does your organization raise awareness of the importance of time management for building construction projects?**

A. Yes B. No C. I do not know

2.2. **Does your organization make efforts to manage time in your building project?**

A. Yes B. No C. I do not know

2.3. **Is the effort made by your organization for time management formal?**

A. Yes B. No C. I do not know

2.4. **Does your organization prepare a schedule (plan) for the project?**

A. Yes B. No C. I do not know

2.5. **Does your organization use the WBS (Work Breakdown Structure) to define planned activities?**

A. Yes B. No C. I do not know

2.6. **Are the relationships between different activities identified and sequenced accordingly?**

A. Yes B. No C. I do not know

2.7. **Is the progress of the building's project management activities continuously monitored and controlled according to the developed schedule?**

A. Yes B. No C. I do not know

2.8. **Does your organization consistently update the schedule of construction projects?**

A. Yes B. No C. I do not know

SECTION THREE: BUILDING CONSTRUCTION PROJECT COST MANAGEMENT

3.1. **Does your organization make its employees aware of the importance of cost management in construction projects?**

A. Yes B. No C. I do not know

3.2. **Does your organization prepare a cost estimate for the project?**

A. Yes B. No C. I do not know

3.3. **Does your organization make an effort to manage costs in your project?**

A. Yes B. No C. I do not know

3.4. **Does your organization use the WBS (Work Breakdown Structure) to prepare the budget estimate?**

A. Yes B. No C. I do not know

3.5. **Does your organization regularly update the budget?**

A. Yes B. No C. I do not know

3.6. **Does your organization make efforts to monitor and control the cost of the project?**

A. Yes B. No C. I do not know

SECTION FOUR: BUILDING CONSTRUCTION PROJECT QUALITY MANAGEMENT

4.1. **Does your organization carry out quality planning in the building construction sector for a given project, i.e. determine the requirements, quality standards and strategies to achieve the quality objectives?**

A. Yes B. No C. I do not know

4.2. **Does your organization prepare and implement policies, procedures and guidelines for quality management in the construction sector?**

A. Yes B. No C. I do not know

4.3. **Does your organization prepare a monitoring and quality control plan for a building construction project?**

A. Yes B. No C. I do not know

4.4. **Does your organization hire or assign a quality control staff or has a department?**

A. Yes B. No C. I do not know

4.5. **Does your organization implement TQM (Total Quality Management)?**

A. Yes B. No C. I do not know

4.6. **Does your organization carry out a building construction quality audit, which means that it examines processes to determine whether project activities comply with organizational and project policies, processes and procedures, and quality requirements?**

A. Yes B. No C. I do not know

Thank you for your cooperation

Appendix B

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

Masters of Art in Project Management

PART TWO - CONSULTANTS

SECTION ONE: GENERAL PROFILE OF THE CONSULTANTS

1.1. **Company's Name**: _____

1.2. **Company's Address**:

_____

1.3. **Profession/ job title**: _____

1.4. **Group (Party)** Contractor ☐ Consultant ☐ Other ☐ , Please specify _____

1.5. **Your organization is …**

A. Local private company
B. Local government/public enterprise
C. Foreign company
D. Joint venture of a local and foreign company
E. Local endowment
F. Other (please specify)

1.6. Your company is

A. ISO certified or compliant
B. In a process to get the certification
C. Neither ISO certified nor in a process to be certified
D. Other (please specify)

SECTION TWO: OPEN ENDED QUESTIONS

2. What are the building construction management control problems related with

2.1. Planning/scheduling of the program?

_____

_____

_____

_____

2.2. Preparation of designs and specifications

2.3. Quality management, cost management and other problems you wish to discuss?

3. What are the possible solutions for the above problems?

Thank you for your cooperation

Appendix C

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PART THREE - CLIENT

SECTION ONE: OPEN ENDED QUESTIONS CLIENT'S PROJECT OFFICE

1. What are the building construction management control problems related with

1.1. Planning/scheduling of the program?

1.2. Preparation of designs and specifications

1.3. Quality management, cost management and other problems you wish to discuss?

2. What are the possible solutions for the above problems?

Thank you for your cooperation