



**St. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDENT  
PROJECT MANAGEMENT PROGRAM**

**A STUDY OF CONSTRUCTION CONTRACT ADMINISTRATION IN ADDIS  
ABABA CITY RESIDENTIAL BUILDING PROJECTS: THE CASE OF AJAMBA  
CONDOMINIUM PROJECT SITE**

ATHESIS SUBMITTED TO St. MARY'S UNIVERSITY, SCHOOL OF GRADUATE  
STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF  
MASTERS OF PROJECT MANAGEMENT

**BY: LEMI TEFERI**

**(SGS/0278/2012A)**

**ADVISOR: MULUADAM ALEMU (PhD)**

**JANUARY 2022  
ADDIS ABABA, ETHIOPIA**

**A STUDY OF CONSTRUCTION CONTRACT ADMINISTRATION IN ADDIS  
ABABA CITY RESIDENTIAL BUILDING PROJECTS:**

**THE CASE OF AJAMBA CONDOMINIUM PROJECT SITE**

**BY: LEMI TEFERI**

**(SGS/0278/2012A)**

**A THESIS SUBMITTED TO St. MARY'S UNIVERSITY, SCHOOL OF GRADUATE  
STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF MASTER OF PROJECT MANAGEMENT**

**ADVISOR: MULUADAM ALEMU (PhD)**

**JANUARY 2022  
ADDIS ABABA, ETHIOPIA**

## DECLARATION

I, the undersigned declare that this thesis is my original work. All material used for this thesis has been duly acknowledged, as well, I confirm that this has not been submitted either in part or in full to other higher education institution for the purpose of earning any degree.

Lemi Teferi

Signature \_\_\_\_\_ Date \_\_\_\_\_

St. Mary's University, Addis Ababa

January, 2022

## ENDORSEMENT

This thesis is submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

MULUADAM ALEMU (PhD)

Advisor

St. Mary's University, Addis Ababa

---

Signature

January 2022

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

A Study of Construction Contract Administration Practices in Addis Ababa City Residential Building Projects: The Case of Ajamba condominium project site.

BY: LEMI TEFERI

(SGS/0278/2012A)

APPROVED BY BOARD OF EXAMINERS

\_\_\_\_\_  
Dean SGS

\_\_\_\_\_  
Signature and Date

\_\_\_\_\_  
Internal Examiner

\_\_\_\_\_  
Signature and Date

\_\_\_\_\_  
External Examiner

\_\_\_\_\_  
signature and date

\_\_\_\_\_  
Advisor

\_\_\_\_\_  
Signature and Date

JANUARY, 2022  
ADDIS ABABA, ETHIOPIA

# Table of Contents

Declaration.....	III
Endorsement.....	IV
Table of Contents.....	VI
Acknowledgements.....	VIII
List of figures.....	IX
List of Tables.....	X
Abbreviations.....	XI
Abstract.....	XII
1.INTRODUCTION.....	1
1.1 Background of the Research.....	1
1.2 Problem statement.....	3
1.3 Objective of the study.....	4
1.3.1 Specific objectives.....	4
1.3.2 Research Question.....	5
1.4 significance of the study.....	5
1.5 Scope and limitation of study.....	5
1.5.1 Scope.....	5
1.5.2 Limitations.....	6
1.6 Organization of the study.....	6
1.7 Definitions of Terms.....	6
2.LITERATUREREVIEW.....	7
2.1 Theoretical literature review.....	7
2.1.2 Building construction projects.....	7
2.2 Contract.....	8
2.2.1 Elements of Contract.....	9
2.2.2 Types of Construction Contract.....	9
2.2.3 Administering the construction based on project delivery method chosen.....	9
2.2.3.1 Force Account.....	10
2.2.3.2 Design Bid Build.....	11
2.2.3.3 Design Build.....	12
2.2.3.4 Finance /BOT.....	12
2.2.3.5 Construction/Facility management Consultancy.....	14
2.2.3.6 EPC – Engineering Procurement Construction.....	14

2.3 Construction Contracts.....	15
2.3.1 Effective Contract Administration.....	16
2.4 Empirical Reviews.....	18
2.5 Conceptual Framework.....	19
3 RESEARCH METHODOLOGIES.....	20
3.1 Introductions.....	20
3.2 Research Area.....	20
3.3 Research design.....	21
3.4. Population.....	21
3.5. Sample Size and Sample Size Determination.....	21
3.6 Data Type and Source.....	21
3.6.1 Data Type.....	21
3.6.2 Data Source.....	22
3.7 Data Collection Approach.....	22
3.8 Methods of Data Analysis.....	24
3.9 Reliability and Validity analysis .....	25
3.9.1 Validity.....	24
3.9.2 Reliability.....	24
3.10 Ethical Consideration.....	24
4 DATA PRESENTATION AND INTERPRETATION.....	25
4.1 Introductions .....	25
4.2 Respondent backgrounds and response rate.....	25
4.2.1 General information of the respondents.....	26
4.3. Descriptive Analysis of the State of Contract Management Practices in project site.....	27
4.4 Contract formulation practices.....	28
4.5 Contract Administration Practices.....	30
5 CONCLUSIONS AND RECOMMENDATIONS.....	32
5.1 Introductions.....	32
5.2 Summary Findings.....	32
5.3. Conclusions.....	33
5.4 Recommendations.....	34
6. REFERENCES.....	35
7. APPENDIXES.....	37

## **ACKNOWLEDGMENTS**

First of all, I would like to thank my Almighty God, for his will and the courage he gave me to complete this study. I would like to address my acknowledgment to my Advisor Dr. Muluadam Alemu for his continuous and facilitation throughout the research.

The employee, contractors and consultants of Ajamba condominium project site should also be acknowledged for their facilitation and assistance in forwarding relevant data from the project. My thanks are also extended to my family and friends who constantly encouraged me throughout the period of the course and thesis work.

Finally, my thanks go to all the people who have supported me to complete the research work directly or indirectly sacrificed their time in filling the questionnaires.



## List of Figures

Figure 2.1 Development of delivery systems overtime.....	10
Figure 2.5. Conceptual Framework (own survey).....	20
Figure 3.1: Area map of the project site (Google map).....	21
Figure I: Ajamba Condominium project site (Kara-Kore).....	46
Figure II: Ajamba Condominium project site (Kara-Kore).....	47

## List of Tables

Table 3.1: Cronbach's alpha reliability of respondents.....	25
Table 4.1 Distribution and response rate of questionnaire.....	28
Table 4.2: General information of the respondents.....	28
Table 4.3 Contract formulation practices.....	30
Table 4.4 Contract administration practices.....	32

## Abbreviations

AAHPO	Addis Ababa Housing Project office
ANAO	Australian National Audit Office
BOT	Build Operate Transfer
DB	Design Build
DBB	Design Bid Build
MoWUD	Ministry Of Works and Urban Development
PDM	Project Delivery Methods
PPP	Public Private Partnership
PMI	Project Management Institute
PPPAA	Public Procurement and Property Administration Agency
SPSS	Statistical Package for Social Sciences

## ABSTRACT

*The study examined the practice of construction contract administration in Addis Ababa city residential building projects: The case of Ajamba condominium construction site.*

*Questionnaires are primary data collection instruments which were distributed to the contract administration officers and the management members of Ajamba construction project and followed by descriptive and exploratory research design and Secondary data's were collected from the reviewed literatures, journals and, Addis Ababa Housing Project Office: Project six office. Interpretation and discussions were made on the basis of results from SPSS 24 software analysis. The result shows that the qualitative research came up with a finding that principal or owner commitment, competence & experience of the contract administrator, understanding contract documents, communications, regular quality assurance and & control, adequate human resource capacity and & appropriate choice of contract delivery method had a significant impact in the execution of the projects with regard to the contract administration of the expansion projects. Based on the finding it is recommended that giving more concern to contract formulation which is significant for an effective contract administration skilled personnel for contract administration.*

*Also applying appropriate choice of contract delivery methods had a positive impact for project execution with regard to the contract administration.*

*Key Words: Contract Administration, contract document, Effective contract administration, contract delivery methods*

# CHAPTER-ONE

## 1. INTRODUCTION

### 1.1 Background of the study

A contract is a legally binding agreement between two or more parties to exchange something of value. In construction, it is usually money in exchange for construction services to build a facility. A contract imposes on both parties contractual and legal obligations that are difficult or impossible to change (Thomas and Ellis, 2007). Conditions of contract define the basic rights, responsibilities, and relationship of the parties involved or the rules by which each party must comply. Conditions of contract mostly consist of: General Conditions & supplementary conditions. General conditions contain general clauses that establish how the project is administered and are intended to be used unchanged for every project. It is usually in the form of published standard document that include written principals common to most construction contracts. Supplementary conditions are specially prepared to modify or supplement the general conditions as needed to accommodate the unique requirements of a specific project (Surahyo, 2018). Standard general conditions of contract are mostly prepared to the mutual benefit of all parties to the contract as they establish measured and predictable standards among the parties.

They are based on generally accepted professional and industry norms and are fair and balanced (Surahyo, 2018). In Ethiopia, the Public procurement agency (PPA) general Conditions of Contract for the procurement of works is a contract form issued in January 2011 as part of standard bidding document (SDB) for international and national competitive bidding. Seven elements are generally regarded as essential to the validity of a contract (Uher and Davenport, 2009). There must be an intention to create a legal relationship, there must be offer and acceptance, there must be valuable consideration, the parties must have legal capacity to contract, there must be a genuine consent by the parties, the legality of the object of the agreement must be ensured and the terms of the contract must be sufficiently certain. Broadly, project phases can be divided into three parts: preconstruction phase, construction phase, and post-construction phase (Surahyo, 2018). Contract administration, the control of contract safety, time, cost, and quality, begins before work at the site commences (Phillips, 1999). A lifecycle of construction projects is relatively long and involves a large team of people who are

contracted to the project. These range from the principal (the owner for who in building construction, improper project management and claim administration.

The success of a project depends on various factors. One of the major factors is efficient contract administration. Contract administration involves making decisions and the timely flow of information to enable completion of the project as required by the contract documents including review and observation of the construction project (Surahyo, 2018). The success of contract administration depends on an effective communication between all the parties involved. This involves establishing relationships between the parties, defining responsibilities and determining the most appropriate administrative procedures (Uher and Davenport, 2009).

Effective construction contracts require careful and precise preparation of each activity undertaken to produce them. This includes the proposal, design, document selection and preparation, bid package assembly, and contract award stages. Individuals assigned to these activities must be selected for their skill, ability, and experience because the frequency of project delays, cost overruns, and claims will be directly affected by the quality of their efforts (Thomas and Ellis, 2007)

According to Abdissa, (2003) one of the main problems in Ethiopian construction industry is lack of qualified engineering professionals with an appropriate level of training in construction management, international contract administration and claims handling. Furthermore, he indicated that delay and disruption in construction works and excessive variation orders are some of the major causes of claims in the industry. In order to successfully support the collaborative effort on a project, understanding the contract documents, administering the construction based on the delivery method chosen and fulfilling the appropriate roles and what is expected from each of the participants are very important.

A project delivery method is a system used by an agency or the Owner for organizing and financing design, construction, and all related services for a facility through an agreement with one or more parties. The three primary and most commonly employed concepts are design-bid-build (traditional method), design and build, and public-private partnership with various variations (Surahyo, 2018).

Based on the preceding introductory background, the aim of this study thus to assess the contract administration practice, to assess their effectiveness and to explore the factors that affect the contract administration practice in the Ajamba's construction project site and to forward recommendations.

## 1.2 Problem statement

Construction is the mobilization and utilization of capital and specialized personnel, materials, and equipment to assemble materials and equipment on a specific site in accordance with drawings, specifications, and contract documents prepared to serve the purposes of a client (Rickets, 1999). Furthermore, because of its exposure to outdoors, unlike a manufacturing industry construction is affected by both daily and seasonal weather variations. Construction influenced significantly by the availability of local construction financing, labor, materials, and equipment.

According to the study by Kanchana<sup>1</sup>, Niranjan, Arun (2018) Contract management is the process undertaken to maintain integrity of the contract and ensure that the roles and responsibilities contractually demarcated are fully understood and carried out to contracted standard. Construction industry is a most complicated industry which is constantly facing uncertainties. The salient features of any contract including delivery schedule, quality specifications, regulations and standards are to be monitored by a good contract management team.

According to California department of general service, (2004) weak contract administration can cause the project to violate terms of a contract, which can lead to penalties, fines and potential lawsuits, also make projects caught up in daily routines and lose sight of contract renewals which makes projects operating under expired contracts, and makes projects in having poor reporting relationship with the contractor and leads the two parties losing benefits of monitoring, the benefits of the agreement and developing any changes to make when the agreement comes up for renewal. Each move made with a contracted entity should be dictated by the good contract management to avoid the high cost of the contract penalty clause.

Monczka, (1998) on the other hand argued that a successful contract administration helps the project in effective working relationship with the contractor, appropriate communication between the parties, good reporting framework that provide useful and regular information, appropriate sanction for poor performance, team performance and leadership, joint problem solving and etc. Besides to create an effective contract administration system, it is vital to address the administration problems that affect it.

According to Addis Ababa city Administration housing project office (2016), the major determinates of cost escalation are: inflation of construction materials, labor costs, design changes, power interruption, poor capacity of some contractors and mismanagement in supervision and procurement procedures. With this regards to the construction sector no researches have been done so far in relation to contract administration practices. This is an indication for the presence of a research gap in the area of construction sector regarding contract administration practice. So, the researcher initiated to fill this research gap by conducting a research on the assessment of the practice of contract administration in Ajamba's construction project site and forward recommendations.

### **1.3 Objectives of the study**

The general objective of this research is to investigate existing practices of construction project contract administration in Addis Ababa condominium building projects: in Ajamba condominium projects.

#### **1.3.1 Specific Objectives**

The specific objectives of the study are:-

- To examine the construction contract administration practices of Ajamba condominium building projects.
- To examine appropriateness of choice of contract delivery method for the project.
- To identify the challenges in the implementation of the construction contract administration practice of in the Ajamba condominium housing projects.

#### **1.3.2 Research question**

In order to achieve the objectives, questions are developed as a research question

- To what extent was the contract administration practice in Addis Ababa city construction is effective on its condominium projects?
- What were the factors affecting (the challenges) in the implementation of the contract administration practice of in the Ajamba condominium housing projects?
- How does the contract administration practices look like at different stages and milestones of the project life cycle?



## **1.4 Significance of the Study**

This study believes to give an understanding about the practice of construction contract administration practice at Ajamba condominium construction projects. The research provides important information about how the construction contract is implemented on the sites, which provides the measures to be taken to enforce the proper controlling techniques of contracts.

- Present a relevant suggestion on any gap observed to the case of the administration bureau & others.
- Helps parties involved in construction to improve problems in the contractual stage including their risk management strategies.
- Include the significance of the study for policy makers, and researchers.

## **1.5 Scope and Limitations of the research**

### **1.5.1 Scope**

The scope of the study is mainly focuses on the practice of project contract administrations on Ajamba condominium construction project. Hence, this study involved client, contractors and consultants only that undertakes building construction projects at Ajamba construction site located around Repi-karakore.

### **1.5.2 Limitation of the Study**

The research work is limited to construction building projects on Ajamba's project site. Mainly on assessment of construction contract administration practices on the building site. While conducting a study on the contract administration practice, the study was considered only the practice and its application in the Ajamba's condominium with regards to Addis Ababa public building projects

## **1.6 Organization of the Study**

This paper is organized in to five chapters. The first chapter presents about the introduction: back ground of the study, statement of the problem, general and specific objectives the significance definition key terms, scope and limitation of the study. The second chapter has dealt about the literature review which includes theoretical and empirical study related to experience of various countries on the same topic. Chapter three focuses on the research

methodology, data collection and procedures sample and sampling technique. The fourth chapter presents interpretation of data, summary analysis and discussions. The fifth chapter presents conclusions recommendations.

### **1.7. Definition of Terms**

**Conditions of contract:** Define the basic rights, responsibilities, and relationship of the parties involved or the rules by which each party must comply. (Wondwossen, 2009)

**Project delivery method:** Is a system used by an agency or the owner for organizing and financing design, construction, and all related services for a facility through an agreement with one or more, parties. (Wubishet, 2006)

**Contract administration:** Involves making decisions and the timely flow of information to enable completion of the project as required by the Contract Documents including review and observation of the construction project. (John, 2019)

**Specifications:** Specific written requirements for the work that is going to be performed which is broken down into each work result. (John, 2019)

**Project management office:** An organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques. (PMBOK, 2008)

## CHAPTER TWO

### LITERATURE REVIEW

#### 2. 1 Theoretical Literature Review

##### 2.1.2 Building Construction Projects

A construction in simple words is a process of constructing something by human for one purpose or another. It may be a road, bridge, a dam, a private residence, an airport, a commercial building, etc. (Tecele and Mehelet, 2009) construction is a process that consists of the building or assembling of infrastructure. Construction is the recruitment and utilization of capital, specialized personnel, materials, and equipment on a specific site in accordance with drawings, specifications, and contract documents prepared to serve the purposes of a client. According to Moavenzdadeh. (1976), construction contributes to the economic development of any country by satisfying some of the basic objectives of development including output generation, employment creation and income generation and re distribution; it also plays a major role in satisfying basic physical and social needs, including the production of shelter, infrastructure and consumer goods.

PMBOK, 2008 defines building construction as the process of adding structure with walls to real property or construction of buildings. It further discusses that if this buildings are not designed and constructed by professionals they might lead to undesirable results such as structural collapse, cost overrun and disputes.

Construction industry is necessary in every country to provide physical developments which help in improving social and economic needs of country (Abedi, Mohamad, & Fathi, 2011). Likewise other countries, in Ethiopia construction industry trend in the past 10 years shows a yearly growth rate of 12.43 and this shows a share of 5.3% of the country's GDP (ECIDP, 2014).

Hence, construction industry has been growing rapidly worldwide. General construction focuses on residential and non-residential constructions and also general civil engineering works, like metal works, electrical works, plumbing, sewerage and sanitary works, refrigeration and air-conditioning work, painting work, carpentry, tiling and flooring work, and glass work. In Ethiopia, since the introduction of condominium housing construction about a decade ago, the dominant housing topology has changed from single to multi-storey (up to

G+12) to maintain the population density of the core areas of major cities, particularly Addis Ababa where the site of multi-storey condominium buildings has become common. The design of each condominium block constitutes various typologies, Condominium housing in Ethiopia (2011). Due to the expanding of public housing construction projects in Addis Ababa time to time, the housing projects exposed to different factors that lead cost overruns, time delays and low quality works.

## **2.2 Contract**

Contract is a written agreement between or among two or more parties whereby each party promises to do or not to do something and agrees to terms (conditions and Warranties) set out in the contract. (Abraham, 2007).

According to Clough (1975) a contract is a commitment. It is an agreement between two parties which gives rise to obligations that are enforceable at law. The basic purpose of a written contract is to define exactly and explicitly the rights and obligations of each party thereof. Uher and Davenport (2002) state an agreement that is legally binding is a ‘contract’.

Preparing the contract is a primary step in a construction project. The type and procedures for construction indicated in the contract have a significant impact on the construction process. Well established contract documents could reduce problems with responsibilities and communication on the construction site. (The World Bank, 2018)

The objectives of contracts must be clear. If the contract did not cover the complete responsibilities of some parties which consequently led to incomplete drawings and construction delays. It is important for the contract administration and management to reduce project risks, increase cost savings, reduce construction claims, and improve economic returns. Well-prepared contracts can effectively manage contract risks through incorporating fair terms, implementing negotiating practices, and using effective communication skills. (The World Bank, 2018)

### **2.2.1 Elements of Contracts**

The basic elements of valid contract are stipulated in the Civil Code Art. 1678. Thus the fundamental elements of contract include: capacity and Consent of the contracting parties, object of the contract, form of contract.

Some writers and researchers extend the above essential elements taking the negotiation process in to consideration (Uher and Davenport, 2002; Abdissa, 2003; Selamawit *et al*, 2006). In such cases the elements of valid contract essential to its formation include: offer and acceptance, competent parties reasonable certainty of terms, object, form, and consideration.

### **2.2.2 Types of Construction Contracts**

The most commonly used types of construction contracts are price based contracts and cost based contracts (Surahyo, 2018)

**Fixed Price Contracts/ Lump Sum form of Contract -:** is the most basic form of agreement between owner and the contractor. In lump sum contracts, the contractor calculates his rates based on the drawings and specifications prepared by the designer. He then submits one lump sum price for the whole works or gives breakdown of the total sum against major activities or sections of the work. In a lump sum contract, the owner has assigned most of the risks to the contractor. The construction means, methods, techniques, sequences, and procedures are the contractor's responsibility. The contractor, in turn, can be expected to ask for a higher mark-up in order to take care of unforeseen contingencies (Surahyo,2018).

**Cost plus Contract:** With this form, the owner assumes all risks of cost overruns. The contractor will receive the actual direct job cost plus a fixed percentage of the construction cost and have little incentive to reduce job cost. Furthermore, if there are pressing needs to complete the project, overtime payments to workers are common and will further increase the job cost. Unless there are compelling reasons, like need for urgency, this method is not advisable to the owner. This method can be used to reduce the time it takes to procure a contractor (Surahyo, 2018).

### **2.2.3. Administering the construction based on the delivery method chosen**

Procurement and contract delivery system is the way project owners together with project regulators and financiers determine the assignment of responsibilities to project stakeholders along the construction process. Procurement and contract delivery system is often determined during the basic planning phase of construction project. The contract strategy determines the level of integration of design, construction and on-going maintenance for a given project, and should support the main project objectives in terms of risk allocation, delivery incentives and so on (Keith Potts, 2008).

According to (Wubishet, 2004).the most common ones and those widely used in the Ethiopian construction industry include the following format: These are:

- ❖ Design Bid Build (DBB)
- ❖ Force Account
- ❖ Design Build (DB) or Turnkey
- ❖ Finance / Build Operate System (BOT)
- ❖ Construction/Facility Management Consultancy, &
- ❖ Alliances and Outsourcing

Such Procurement and Contract delivery systems are developed overtime and are shown in Fig.2.1 below. The development is based on problem solving for the previous type and the Development of the Construction Industry technologically and management wise (Wubishet, 2004).

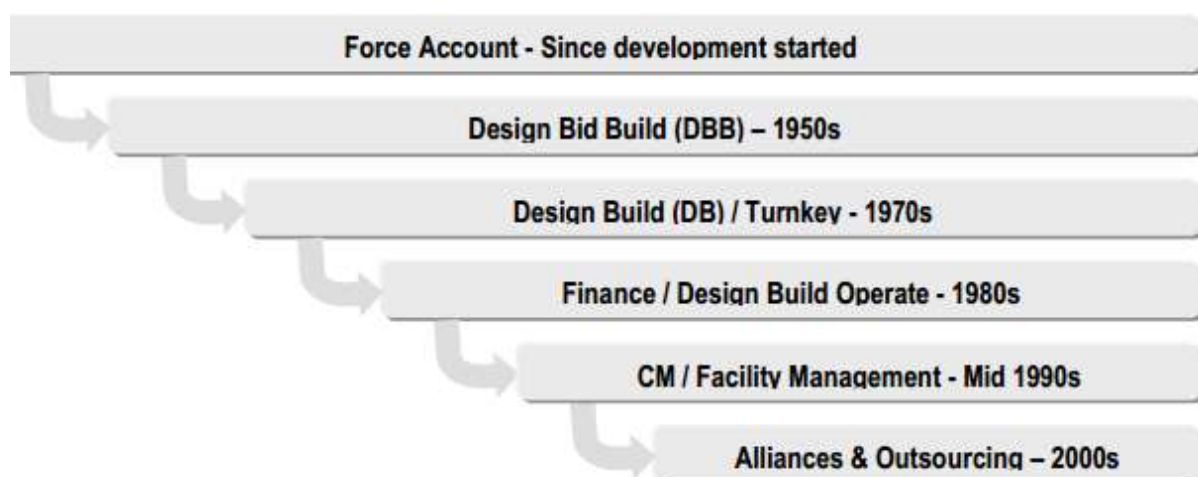


Figure 2.1 Development of delivery systems overtime (Wubishet, 2004)

### 2.2.3.1 Force Account

When the project owners engage themselves to undertake the project, it is called a force account delivery system. Often such a system is promoted if the project owners believe that there is a comparative advantage in cost, time and quality issues. Besides,

When there is a lack of capacity from the private sector to undertake very large and technologically new projects, public companies do undertake such projects using force account delivery systems (WBPGGL, 1999). These days this type of delivery system is often used when projects are small and places are remote such that reaching them is difficult and in general they are not attractive enough to call the attention of bidders (WBPGGL, 1999).

### **2.2.3.2 Design Bid Build (DBB)**

This is the most practiced type of delivery system in the construction industry. After project owners did prepare the basic planning that identifies construction project programs, they call upon the participation of design and / or supervision consultants either by tender or by negotiated contracts. This consultant will carry out the design together with the necessary tender documents which will be the bases for tendering to select contractors. These process is called Design -Bid -Build and hence the name for such delivery system. (Wubishet, 2004)

Some of the main criticisms of the traditional DBB method of project delivery are lack of innovation, delayed completion periods, and cost overruns (Ibbs, 2003). Since, in the DBB method, the client bears most of the risks of the design and the construction aspects, there need to be better practices to assure the client's requirements are met, including quicker project completion times, and cost effective solutions.

### **2.2.3.3 Design Build (DB) / Turnkey**

Design Build or Turnkey Delivery system is a response to problems associated to the last two types of delivery systems. These were promoting privatization and its business-like approach to enhance the Force Account System and reducing fragmentation, adversarial relations and Project owners' risk which are recurrent manifestations in the DBB delivery system. (surahyo, 2018)

Design Build or Turnkey by principle reduces numbers of procurement processes engaged in the fragmented process and employ only one procurement process and a single contractor to provide the entire Construction Implementation Process (Design and Construction Implementations). (surahyo, 2018)

Typical advantages of this system include (Marwa, 2004):

- Reducing fragmentation and adversarial relations between designers and constructors;
- Minimizing Project owners' risk transferable due to Designers' faults;
- Accountability and entire responsibility for both design and construction which entitle the employer to receive completed project is onto a single contractor;
- Employers' responsibility to co-ordinate interfaces between different project elements is avoided;

- Single point responsibility minimizes the opportunity to claims by the contractor due to design related issues;
- Coordination between design and construction processes will also be enhanced

(Both in communication for constructability as well as in fast tracking); and

- The client budget or financial requirement is defined early enough in the development process.

The disadvantage of this delivery system is loss of control, cost of tender and cost of risks (Marwa, 2004).

- Since limited supervisory role by the employer representative is practiced; which is relatively flexible and makes the employer distanced from the whole process, the employer has little chance to understand what is developed and entertain variations in requirements implying loss of control.
- Contractors in order to provide reasonable offer, their tender cost is higher than in the case for DBB delivery system. This is because they need to carryout acceptable design for project cost offers. Though it was not practiced often, employers who shared costs related to tendering are informed to get seriously considered offers. World Bank suggested a Two staged procurement method based first on technical merit and followed by financial competition and not for more than six bidders.

Projects carried out using DB delivery system are often called Turnkey Projects because a single contractor is responsible to hand over the completed facility and let the Project owner to turn the key and gets in.

#### **2.2.3.4 Finance / Build Operate Transfer (BOT)**

Build–Operate–Transfer is a form of procurement and contract delivery system that promotes Public Private Partnership (PPP) in which a private company is contracted to finance, design, construct, and operate for a certain period (usually 10 years) and transfer. BOT contractors look to project financiers for the realization of projects through equity contributions or credits. Such provisions are different from budgeted finances such that they involve no or limited re – course which means the project owner is not responsible for any liability other than force majeure and agreed upon claim adjustments. This obliges that projects should first be viable for revenue generation in order to payback its debts. (WB PGL, 1999).



The Typical BOT contract is the process whereby a government grants a concession to a project development company to develop and operate what would normally be a public sector project, for a given period of time known as the concession period. BOT project involves a potentially complex contractual structure. The Operation period between completion and transfer gives the contractor an opportunity to verify the quality of the output of the services and works, and train the employer personnel on how to manage the facility afterwards. In some BOT contracts, defect liability period will be included in order to ensure the quality of the facility during transfer. This is because, operators in an attempt to save costs, may decrease operating and maintenance expenditures towards the end of the concession period (WBPGL, 1999).

This delivery system is advantageous because of three major factors:

- It minimizes owners' scarcity of financial resources;
- It devoid of considerable risks from the project owners and lesson regulatory activities; and
- The facility is well operated and transferred with free of charge or minimum compensations to project owners.

Such delivery system requires appropriate project packaging and their clear definition. It is advisable to start with small projects and tries to develop experience and expertise to make such delivery system successful. Most BOT projects failed because of their built up and engagement in very large projects which is an extremely risky business for contractors. Consortium of contractors is used to carry out such projects. The increasing popularity of the BOT project is largely due to a shortage of public funding and the opinion that the facility will be more efficiently managed by a private entity.

#### **2.2.3.5 Construction / Facility Management Consultancy**

Construction Management Consultancy Delivery System is a response to problems associated with DB and BOT where the Project Owner was not well represented for its benefit and the problem of fragmentation between Planning and Implementation. (Kknocherand, 1998)

As a result, construction management consultancy firm is used to coordinate all activities from concept inception through acceptance of the facility. Facility management consultancy adds operation of facility during operation to Construction Management Consultancy (Kknocherand, 1998).

Construction Management service in such delivery system include the management activities related to a construction program carried out during the Basic Planning, Design & Construction Implementation and its completion process that contributes for the successful completion of projects. The main difference of this delivery system is that, while all the others involve only during the implementation phase after major decisions was made during the basic planning phase of the construction process, it is involved in the whole construction processes. Construction Management Consultancy service are particularly attractive to organizations that involve in construction physical infrastructures. Construction Management Consultants then represents project owners to carry out the following services:

- Feasibility studies of Construction related services
- Plan and Monitor the Triple Constraints of Project Performances
- Lead and Organize regulatory systems of the Construction Industry
- Valuation, Quantity Surveying and Procurement and Contract Management Services

#### **2.2.3.6. EPC–Engineering Procurement Construction**

In this type of contract delivery system, the engineering and construction contractor will carry out the detailed engineering design of the project, procure all equipment and materials necessary, and then construct to deliver a functioning facility or asset to their clients. According to Cristian.*et al*, 2007 this kind of delivery system is also known as turnkey project service to indicate the system is delivered to client ready for operation. The project is largely contractor managed, i.e. the contractor holds all of the responsibility and the risk involved is weighted towards the contractor and away from the owner. Companies that deliver EPC projects are commonly known as EPC contractors. The contractor has to execute and deliver the project within an agreed time and budget. According to Cristian. *et al*, 2007, one disadvantages of this delivery system is the owner's ability to control the project is low and to control this the client can sometimes hire Project Management Consultants(PMC) to ensure the EPC contractor is carrying out the agreed scope of work in accordance with the conditions of contract. The first three types of delivery systems; force account, DBB and DB are mostly utilized in different building projects of Ethiopia. As mentioned above the construction management consultancy is relatively not common in Ethiopian construction industry. But there are some construction management firms which are taking part in different constructions of Ethiopia; Campbell project management services [Ethiopia] PLC (CPMS) can be taken as

an example, which is a well-established and growing business providing project management services in Ethiopia.

The EPC delivery system is used for large scale projects in Ethiopia. Some of these projects are; The Ethiopian government signed an EPC contract with an Indian company (Overseas Infrastructure Alliance) for the construction of Tendaho sugar factory and the expansion of Fincha and Wonji sugar factories on January 10, 2007 (Fitsum, 2014). According to Yehualashet, 2012, EPC turnkey contract was signed on September 3, 2009 between Ethiopian Railway Corporation and the EPC contractor, CREC, to undertake the Addis Ababa Light Rail transit Project. The hugest project yet, The Grand Ethiopian Renaissance Dam, were awarded to Salini Construttori using engineering Procurement and construction (EPC) contract in April 2011. The project owner, Ethiopian Electric Power Corporation (EEPCO), also previously commissioned Salini Construttori for the Gibe III hydroelectric project on a turnkey, Engineering Procurement Construction (EPC) bases in July, 2006.

The above basic project delivery systems are not independent but have close relationship with each other (Cristian. *et al*, 2007). These project delivery system classifications help us to gain a good perspective of the rules involved in the project construction, and allow us to find ways to complete the project with high efficiency. Choosing the right type of delivery system for a particular project can help achieve project objectives successfully.

### **2.3 Construction Contracts**

Construction contract may be formed between a contractor and a proprietor, between a contractor and subcontractors, between a principal and a designer, and so on. The relationships, both contractual and otherwise, between the various parties in the building process have become complex and in many cases quite obscured. It is likely that some co-ordination and contractual problems are bound to occur, resulting in claims and disputes (Uher & Davenport, 2002). Construction contracting has its own terminology, its own doctrines (legal and otherwise) and its own body of legislation A variety of factors make a construction contract different from most other types of contracts. These include the length of the project, its complexity, its size and the fact that the price agreed and the amount of work done may change as it proceeds. Because the contractual relationships between the parties to a construction contract are not likely to become less complex in the future, every effort should be made to minimize the number of claims and disputes and the impact they may have on the cost of the project. To achieve this, the owner/client should select the appropriate format for contract documents and aware of the advantages and disadvantages of format selection. Owner-

approved plans, specifications, and contract documents define the construction work and clarify the scope of work. Conflicts among construction parties due to repetitive work can be avoided if the owner is aware of the importance of contract types and formats.

### **2.3.1. Effective Contract Administration**

Increasingly, public sector organizations are moving away from traditional formal methods of contract management and towards building constructive relationships with providers especially in the procurement of goods. The management of such a contract requires a range of skills, knowledge and resources for both the procurement entity and the provider.

Contract administration is concerned with the mechanics of the relationship between the customer and the provider, the implementation of procedures defining the interface between them, and the smooth operation of routine administrative and clerical functions. On the other side, effective contract management goes much further than ensuring that the agreed terms of the contract are being met – this is a vital step, but only the first of many. (ANAO, 2007). No matter what the scope of the contract, there will always be some tensions between the different perspectives of customer and provider. Contract management is about resolving or easing such tensions to build a relationship with the provider based on mutual understanding, trust, open communications and benefits to both customer and provider a win/win relationship.

According to International Trade Centre (ITC) in the year 2000 prepared a manual/guide book on the management of supply contracts in addresses basic contract implementation. The mentioned aspects basing on ITC guidelines can be managed as follows;

**Managing Costs:** Costs are effectively managed through the use of contract budget. The contract management team in collaboration with the contract professionals has got the responsibility of ensuring that the costs are properly controlled and managed in accordance with an agreed budget. The agreed budget should consist of the payments to the supplier in accordance with the contract, contingency allowance. Any signs of cost escalations should be dealt with as early as possible because they are going to affect contract financing and performance but also on the other side minimizing the budget is not a good option as it may affect the quality.

**Managing Quality:** When the contract volume is big such as procurement of medium and large goods; the level of quality risk is high such as when new technology is involved or a new

supplier is being used and in construction projects, the purchaser must influence the management of quality. The quality plan is the prime document for managing quality that spells out how the quality performance (i.e., the technical specification) and objectives will be achieved. In the case of construction project, the quality plan should specifically provide details on how the quality function is organized, and who are the responsible individuals, the quality control checks (e.g., inspection and testing) to be carried out and what are the acceptance criteria for these and measures to be taken for non-conformance/deviations. Also, it has to show the procedures that will be used in managing quality; for example, quality control of incoming building materials, construction procedures, inspection/testing procedures and refurbishment procedures in case of deviations.

**Managing Time:** Time is effectively managed through the use of contract schedule/ time plan. A schedule that indicates the activities and their completion date is necessary when on time delivery is important. The schedule will allow the organization to identify any slippage or failure to complete an activity on time and take corrective action. The schedule should be developed basing on reasonable understanding of what is involved and how long it will realistically take. However, sometimes activities may not be completed on the desired completion date, in that case, reasons behind should be established and adjustments/corrective measures should be taken effectively without further delays. Also, when establishing work plans and time schedules care should be taken on critical activities that when delayed will severely affect other activities depending on them and consequently delayed completion of the project.

**Risk control:** In contract management it is highly advisable to focus much attention on where the risks are greatest in order to manage them before they affect contract implementation progress. There are a number of common risks that are related to contract management, some of the risks include; schedule risks, cost risks, quality risks, commercial and other risks. These can be effectively managed through the use of risk register that describes all the risks one needs to be aware of during the contract implementation to reflect changes in risk as the contract progresses. However, the register should include information such as description of the risk, causes of the risk, the stage in the contract when the risk could occur, estimates of the impact on the contract performance in terms of time, cost and quality and the risk management strategy on how the risk is to be prevented or its effects minimized through using insurance, frequent expediting, additional inspection etc. Therefore, a key objective for the management of any contract is to ensure that it continues to achieve value for money over time and it is about the trade-off between quality, time, cost and risk throughout contract implementation.

## **2.4 Empirical Literature Review**

The office of the CAG (2012), in assessing the adequacy of procurement contracts management the financial year 2010/11 found out that average level of compliance for contracts management was 64% for Ministries, Departments and Agencies.

Generally, the weaknesses included improper preparation of contracts, some of the contracts lacked important contract documents such as conditions of contract, drawings and specifications, liquidated damages were not applied for delayed contracts and site meetings were not conducted for most of the reviewed contracts. Also there were no adequate quality assurance and control plans, completed works were not tested to ascertain whether they have attained the specifications as provided in the contract documents, progress reports for works contracts were not prepared, site supervision reports were not prepared, extension of time were issued without justifiable analysis and without following appropriate procedures.

Furthermore, payment certificates were not attached with necessary information such as measurement sheets and working/take-off sheets to justify the quantities paid, in some cases payments were made for works which have not been done by exaggerating the quantities and goods inspection and acceptance committees were not appointed to ascertain the quality and quantity of the supplied goods.

In response to the identified weaknesses procurement entities have been at pointing at the absence of adequate and capable staff to be the major reason behind such outcomes however, (Wami, 2009) revealed that, presence of adequate and capable staffs for contract management does not necessarily warrant effective management of contracts. He pointed out that proper monitoring system and positive staff attitudes are crucial for the success of the contract. Also, factors such as payment delays, ineffective preparation of procurement contract plan, weakness in project design and low staff performance due to negative working spirit/attitudes were found to be affecting contract management practices in public sectors and proper measures have to be taken in order to improve contract management practices.

On the other perspective, (Mitambo, 2009) argued that contract management is not given much of the deserved attention as it happens that some of the contracts ended without proper approval or endorsement of the relevant authorities. The approach for management is also associated with unapproved variation of works; poor quality of products together with late deliveries, there is no clear understanding to who is responsible for management of procurement contracts.

Apart from that, some of the major weaknesses in contract management have been caused by lack of planned and coordinated training and development programs, non-adherence to the terms and conditions of the contracts, ineffective use of technology in the area of project management, lack of good project planning resulting to unnecessary changes of scope or specification and design, lack of carrying out post-implementation evaluation of completed contracts, (Hanga, 2008). The outcome of the observed poor practices in management of procurement contract is non-achievement of value for money, loss of public funds or organization financial resources as it has been observed by (Mshana, 2007). Hence, on-going and post contract award activities have to be closely monitored and controlled to enhance procurement contract management especially during defect liability period where by defects identified by the consultants/engineers or users have to be rectified by contractors and liquidated damaged be charged for late deliveries as agreed in the contract.

As per the annual report of Public Procurement and property Administration Agency (PPPAA) in 2018 Fiscal year 12.6 billion Ethiopian birr of contractual agreement was signed. Among the economic operators/suppliers which were entered in a three-year frame of agreement, all the suppliers were not supplied the goods at the right time and the right quality (the goods are not as per the specification) as per the contract terms. In addition to this, the suppliers were not willing to supply the goods in the agreed price (PPPAA, 2018).

Most of the contracts which are administered by the user public organizations were not directed by the appropriate personnel and there was not the assignment of the contract manager as a result almost all the contracts were not executed as per the agreed terms and conditions (PPPAA, 2018).

## 2.5. Conceptual framework

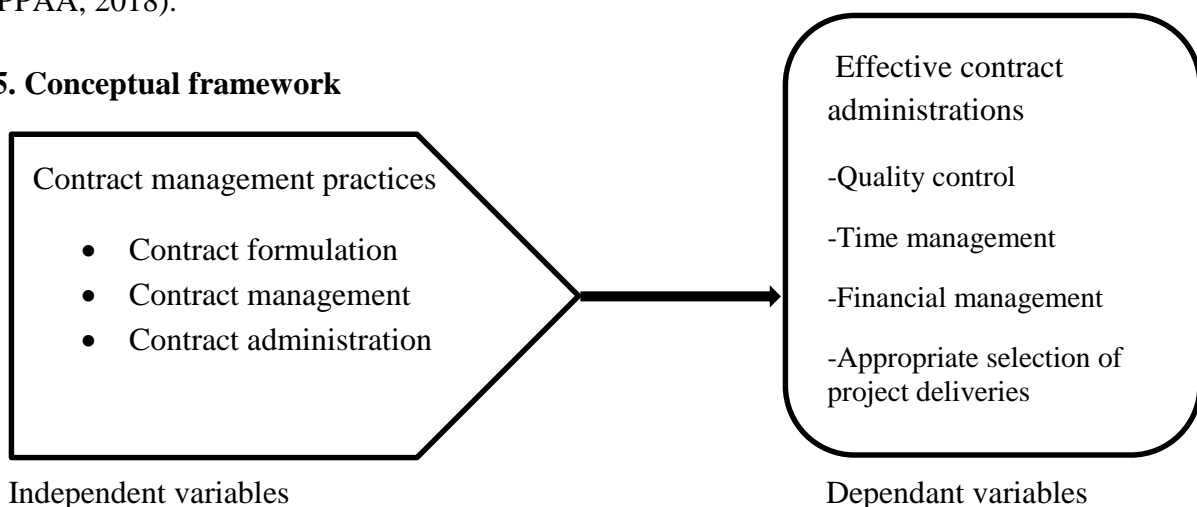


Fig.2.5. Conceptual Framework (Source: own survey)

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter describes the methodology and the area of the research work. The main topics included in this chapter are research design, data type and source, data collection methods, data collection approaches and methods of data analysis.

#### 3.2 Research Area

The area where the research is conducted is in Addis Ababa kolfe keranyo sub city in the area of Ajamba project site and office. Some segment of participants are permanent employees of the project who are in the client side and others are residents who already settle there and others following up and waiting for the completion of the projects to settle. The remaining part in the research area is represented by consultants and contractors who are the subject of the research until the completion of the project on their hand or keep being the subject if the clients commence them another project.



Figure 3.1: map of the project site (source: Google map)



### **3.3 Research design**

This study adopted a descriptive research design. The descriptive research design attempts to describe the effectiveness as well as contract administration practices at the project site and explores the factors that affecting the contract formulation and administration in construction Project. Based on the definition above descriptive type of research design is best to achieve the aim of this research since the study focuses on assessing the practices construction contract administrations of the project site.

### **3.4 Population**

The target population of this research are clients, consultants, contractors and management professionals who have direct and indirect relation with the contract administration practice in target construction project site.

### **3.5 Sampling Technique and Sample Size Determination**

Sampling is the selection of subset of the population of interest in research study. In the vast majority of research endeavors, the participation of entire population of interest is not possible, so a smaller group is relied up on for data collection. Sampling from the population is often more practical and allows data to be collected faster and at a lower cost than attempting to reach every member of the population (Turner, 2020).

In order to generalize from a random sample and avoid sampling errors or biases, a random sample needs to be of adequate size. What is adequate depends on several issues like the absolute size of the sample selected relative to the complexity of the population, the aims of the researcher and the kinds of statistical manipulation that have been used in data analysis (Taherdoost, 2016).

Therefore, by using the above sampling techniques with 85% confidence level, 10% margin of error, total population of 120 and 50% population proportion the representative sample size for the study is calculated as 37.

### **3.6 Data type and source**

#### **3.6.1 Data type**

There are different types of data that can be used in a research like primary and secondary data, cross sectional data, categorical data time series data and special data (Aryal, 2019).

In this research Primary and secondary data were used for the investigation of the construction contract management practices applied in Addis Ababa 20/80 and 40/60 condominium projects, typically in Ajamba housing projects site.

### **3.6.2 Data source**

Primary data is more reliable than secondary data owing to the originality of the data that has been collected. It does not produce outdated information or secondary sources that may be subject to some 'errors or discrepancies (De Sordi, 2013).

Secondary data may be collected for various purposes. A systematic process with proper planning and organization is followed when collecting primary data from its source of origin by the researcher. Secondary data is collected from both internal and external published sources (Shokane, 2018).

The primary data represents firsthand information obtained from respondents who works for the teams of client, contractors and consultants. The primary data were collected through questionnaire and interview. This data helped to find out the challenges contract administrations in the projects and the possible effects on the process of the project. This study used the primary sources obtained from the client, contractor and consultant of Ajamba housing projects.

### **3.7 Data Collection Approach**

The study assesses the challenges in construction contract administration practices on Ajamba condominium construction project site. To achieve the study objectives, a critical review of relevant literature was done coupled with questionnaire survey to collect information on effective usage contract managements on Ajamba condominium construction project site. Through the literature review, challenges of construction contract administration identified which provided the basis of formulation of questionnaire distributed to the construction professionals, consultants, contractor and clients. The qualitative data collected through questionnaires was then compiled to be interpreted as to draw conclusions

### 3.8 Methods of Data Analysis

A total of 55 questionnaires were sent to the contractors, client and consultants in the condominium construction site and project office of Ajamba. 39 responses were correctly filled and obtained. Out of which 2 were rejected. A total of 37 respondents were used for the research.

The questionnaire for the study was designed based on the information derived from reviewed literatures in correlation with objectives of the study and overall content divided into two major parts. All of questionnaires distributed for different participants were hand-delivered in their respective locations (offices and site). The study employs both primary and secondary data sources at different stages and mixed approach of data analysis. Those primary data sources are collected through questionnaires, contract and other documents analysis and interviews of main stakeholders involved in government housing projects of the study area. Then all quantitative data obtained from the structured questionnaire were analysed using Statistical Package for the Social Sciences (SPSS) 24 software and descriptive statistics, while the qualitative data gathered from interviewees were analysed using qualitative content analysis method. Reliability of the data used from the questioner survey checked on the SPSS using the Cronbach's alpha ( $\alpha$ ) coefficient which ranges from 0 to 1.0 and indicates the extent to which the respondents rate the same question. Cronbach's alpha is the most commonly used measure for internal consistency i.e. reliability. Accordingly a value  $> 0.7$  speculates consistency and reliability of the responses from the participants on the questionnaire survey (Nallaperumal, 2018). The table below shows the results (Table 3.1)

Table 3.1: Cronbach's alpha reliability of respondents

#### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on	N of Items
	Standardized Items	
.841	.776	36

Source: own survey (2021)

### **3.9 Reliability and Validity Analysis**

#### **3.9.1 Validity**

Validity will be achieved by having objective questions included in the questionnaire. It is the extent to which a test measures what it claims to measure (Lakshmi, 2013). A measure is valid if it measures what it is supposed to measure. Content validity is the extent to which the items in an instrument cover the entire range of the significant aspects of the area being investigated (Kindy, 2016). It is the degree to which the measurement device, in this case, the measuring questions in the questionnaire, provides sufficient coverage of the research investigative questions.

#### **3.9.2 Reliability**

Reliability is the extent to which measurements are repeatable when different persons perform the measurements on different occasions under different conditions with supposedly alternative instruments which measure the same thing (Dorst, 2011). Reliability is consistency of measurement or stability of measurement over a variety of conditions in which basically the same result should be obtained.

The most popular method of testing for internal consistency in the behavioural sciences is Cronbach's coefficient alpha. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. In order to test the internal consistency of variables in the research instrument Cronbach's alpha coefficient was calculated. Gliem provide the following rules of thumb: if " $\alpha > 0.9$  – Excellent,  $\alpha > 0.8$  – Good,  $\alpha > 0.7$  – Acceptable,  $\alpha > 0.6$  – Questionable,  $\alpha > 0.5$  – Poor, and  $\alpha < 0.5$  – Unacceptable" (Gliem, 2003). The reliability in this study as assessed by coefficient alpha was found to be 0.841 is indication of acceptability of the scale (good) for further analysis.

### **3.10 Ethical Consideration**

The researcher ensures the quality and integrity of this project work. Accordingly, participant were given a clear explanation about the nature of the study and to participate voluntarily emphasizing that the data were used only for the intended academic purpose and all data is analysed without using respondent's personal information. Moreover, all the data gathered from respondents is kept confidentially and all secondary sources of data are acknowledged by the researcher.

## CHAPTER-FOUR

### DATA PRESENTATION AND ANALYSIS

#### 4.1 Introduction

This chapter describes the results and discussion of study and questionnaire survey concerning construction performance challenges in Ajamba condominium construction projects from contractors, consultants and client viewpoints. The results gathered from primary data through questionnaires in order to collect more reliable data that provides justification to the study problem. The questionnaires that were gathered from different respondents are analysed.

#### 4.2 Respondent backgrounds and response rate

Part one of the questionnaire is intended to obtain general information about the involvement of the respondents. It consists of information related to their position in the organization, organization type, and work experience in building sector.

A total of 55 questionnaires were sent to the three groups of respondents who involved in the current condominium building construction project of Ajamba. About 36 questionnaires were distributed for contractors, 9 for consultants in all site and 10 questioners was sent to client representatives in physical project coordinating office. From the total questionnaires, 39 questionnaires were collected which comprises 6 from client representatives, 28 from contractors and 6 from consultants. Out of which 2 were rejected. A total of 37 respondents were used for the research.

Before starting the analysis, the returned questionnaire was checked for their reliability and all responded questionnaires were found to be suitable for data analysis. This gives a response rate of 70.9% as shown in Table 4.1 below.

Table 4.1 Distribution and response rate of questionnaire

Category	Questionnaire Distributed	Questionnaire Returned	Valid Responses	Percentage Returned (%)
Client	10	6	6	60%
Contractor	36	28	27	77.8%
Consultant	9	5	4	55.6%
Total	55	39	37	70.9%

Source: own survey (2021)

## 4.2.1 General information of the respondents

Table 4.2: General information of the respondents

Characteristics		Percentage
General work experience in building construction	< 5 years	27
	5 – 10 years	32
	> 10 years	41
Education Level	PhD	11
	M.Sc.	19
	Degree	42
	Certificate	28
Sector in Construction	Contractor	44.9
	Consultant	24.6
	Client	17.2
	Other	13.1
Current Position	Supervisor	10.6
	Project manager	13.9
	Office engineer	37.7
	Site engineer	16.3
	Contract administrator	21.3
Experience in bid evaluation and procurement	< 5 years	15.5
	5 – 10 years	31.96
	10 -15 years	36.8
	≥15 years	15.4
Role in organization	Contractor	34
	Consultant	26
	Employer	31
	Client	12

Source; Own Survey (2021)

### 4.2.1.2 Representing Sector in Construction

As per the data inferred in Table 4.2, from the total respondents, the majorities or 77.8% are contractors, 55.6% consultant, and 60.0% are client professionals and other professionals who are indirectly linked with construction and contract management.

### 4.2.1.3 Respondents Educational Background

Among the respondents, 28% are certificate holders. The highest percentage of educational background is bachelor's degree with 42% and master's degree with 19%.and 11% of PhD holders.

### 4.2.1.4 Respondents Experience in the Project

Similarly, table 4.2 also showed 32% of respondents spent 5-10 years and 27% of respondents below 5 years of experience in this project and other similar condominium housing projects in Addis Ababa. 41 % spent more than 10 years in this condominium housing and building construction sectors.

Regarding the position of the respondents, Table- 4.2 above indicates that, 37.7 % of them are office Engineers, 13.9% of them are a Project Manager, and 21.3% of Contract Admin manager, 10.6% Site Supervisor and 16.3% are site engineers.

The position of the respondent's helps the research in indicating how the study was based on professional on the projects are related with the contract administration practice. The experience also helps the study, to indicate how the study was conducted with the professional's diversified experience instead of conducting a survey from a single year experience. Educational background helps the study, to show how the data was collected from the respondents who have better knowhow of the construction industry and helps in the clarity of the response.

## 4.3. Descriptive Analysis of the State of Contract Management Practices in project site

The respondents were asked to indicate the state of contract management practices in the construction project site, Ajamba. The contract management practices included was contract formulation practices, contract management and contract administration practices. A five-point Likert scale with 1 = Strongly Disagree; 2 = Disagree; 3= Neither Agree nor Disagree; 4 =Agree; 5 = Strongly Agree was used to rate the state of Contract management practices.

Analysis of the data was done using means and standard deviations. The means recorded were interpreted as follows: 1-1.49 = Strongly Disagree; 1.5-2.49 = Disagree; 2.5-3.49 = Neither Agree nor Disagree; 3.5-4.49 = Agree; 4.5-5.0 = Strongly Agree (Lady, 2016)

#### 4.4 Contract Formulation Practices

The effectiveness of the contract stem on its formation process. In contract formation phase three basic elements should be fulfilled, viz. capabilities of the parties and their consent sustainable at law, sufficient definition of the object of the contract and it is possible and lawful, and the contract is made in the form prescribed by law. (Civil Code, 1959) The study sought to determine the state of contract formulation practices in Ajamba condominium site. The study findings are shown in table 4.5 below.

Table 4.3 Contract formulation practices

<b>Contract formulation practices</b>	<b>N</b>	<b>Mean/Pe rcent</b>	<b>Std.Devi ation</b>
Project site has effective contract formulation performance.	37	3.42 /9.7	.872
Contract administration is one of the most emphasized areas in public contracting.	37	3.74 /10.108	.911
The purposes and scope of the contracts are well defined and communicated in prior of the final dates	37	3.62 /10.24	.833
The total spend during the contracts are well understood by both parties.	37	3.78 /10.22	.816
In the preparation of the contract document all the necessary components are incorporated and prepared by the professional person.	37	3.40 /9.65	.967
The project office gives due emphasis to contract formulation	37	3.53 /10.0	.909
All terms and conditions are always included in the contract formulation stage.	37	3.39/ 9.65	.946
Contracts are sufficiently formulated.	37	3.48/ 9.87	.931



The purposes and scope of the contracts are well defined and communicated in prior of the final dates.	37	3.80 /10.27	.704
Accurate specification of requirements and quality standards are well described in the contract document.	37	3.64/ 10.3	.842
Overall	37	3.5804	.59019

Source: own survey (2021)

As shown from the above table, an overall mean and standard deviation of (M=3.5804, SD=0.59019) was recorded indicating that most of the respondents agreed that the contract formulation practice was practiced in the area. As revealed from the table, the purposes and scope of the contracts are well defined and communicated in prior of the final dates was most of the respondents agreed with relatively highest mean (M= 3.80, SD= 0.704) followed by the total spend during the contracts are well understood by both parties (M= 3.78, SD= 0.816).

The stage of contract formulation is highly emphasized on contracting public projects and it has an effect on administering public contracts (M=3.74, SD=0.911), the purposes and scope of the contracts are well defined and communicated in prior of the final dates (M=3.62, SD=0.833), the construction project gives due emphasis to contract formulation (M=3.53, SD=0.909), accurate specification of requirements and quality standards are well described in the contract document (M= 3.64, SD=0.842) were practiced respectively in the projects.

The analysis also showed that a low standard deviation spread from 0.704 to 0.967 which implies that respondents were more similar in their opinion to the responses given under contractformulationpractices.

In the preparation of the contract document all the necessary components are incorporated and prepared by the professional person (M= 3.40, SD=0.967), all terms and conditions are always included in the contract formulation stage (M= 3.39, SD =0.946), Your project site has effective contract formulation performance (M = 3.42, SD = 0.872) and Contracts are sufficiently formulated (M=3.48, SD=0.931) as per the result of the analysis of the above four points the respondents were neutral (neitheragree nor disagree).

As per the analysis report, the findings about contract formulation revealed that the construction site has acceptable contract formulation practice. This implies that there is the

Formulation of a legally binding agreement, setting out detailed terms and conditions of business and the specification of requirement

#### 4.5 Contract Administration Practices

The study sought to find out the state of Contract administration practices in the construction site office. The response from the respondents were analysed and presented in table 4.4 as follow.

Table 4.4 Contract administration practices

<b>Contract administration practices</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Effective contract depend on contract administration.	37	3.98	.832
The construction site takes more attention to the contract administration.	37	3.24	1.073
The project office implements any procurement contract it has signed with suppliers promptly.	37	3.44	.839
The project office has to identify the duties of a supplier under a contract and insure that the supplier performs such duties in due time.	37	3.46	.951
Contract administration is one of the most emphasized areas in public contracting.	37	3.92	.909
The project office appoints qualified members to take the responsibility of administering the contract.	37	3.09	1.144
Time Schedule for the Contract is Strictly followed.	37	3.16	1.132
Overall	37	3.4692	.62136

Source: own survey (2021)

From the above table, an overall mean and standard deviation of (M=3.4692, SD=0.62136) was recorded indicating that the respondents neither agree nor disagree about the contract administration practice. As revealed from the table, effectiveness of contract management is depending on contract administration was agreed with relatively highest mean (M= 3.98, SD=.832) followed by Contract administration is one of the most emphasized areas in public contracting (M= 3.92, SD= .909). About the rest of the contract administration practices the respondents neither agreed nor disagreed.

The analysis also showed that a high standard deviation spread from 0.832 to 1.144 which implies that respondents were more varied in their opinion to the responses given under contract administration practices.

The study sought to find out the extent to which Contract administration practices influences construction performance. The questions were formed in a five point Likert scale such as 1=strongly disagree, 2=disagree, 3=Moderate, 4=agree, 5=strongly agree. Results are given blow on Table4.5.

	Percent	Valid Percent	Cumulative Percent
Strongly agree	65.62	65.62	65.62
Moderate	34.38	34.38	34.38
Total		100.0	100.0

Source: Own Survey (2021)

From the findings, majority of the respondents, 65.62% said that post Contract documents influences construction project performance to a strong agreement. And 34.38% of the respondents said that effective contract management influences its administration performance to a moderate.

#### **4.6 Analyses on the major determinant factors (the challenges) that affect the contract administration practice**

The data for this analysis was collected from the open ended questionnaire, interviews and the researcher tried to explore the respondent’s response regarding the major determinant factors (challenges) which hinder the implementation practice of the contract administration.

Based on this the main challenges were:

- Reworks due to errors during the construction stage.
- Shortage of resources during the constriction stage.
- Design change during the project execution
- Poor schedule management of the project activities.
- Lack of training on Contract Administration practices.
- Poor feasibility study.
- Delay in payment to contractors of completed activities

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1 Introduction**

The study pursued to establish the effect of contract management practices on its construction project administrations. The objectives of the study were to investigate the contract management practices in the Ajamba project, to examine the relationship between contract administration practices and effective contract management. This chapter provides the summary of findings with respect to the study objectives, conclusions and recommendations of the study.

#### **5.2. Summary of Findings**

A Lump-Sum contract is used on Ajamba condominium construction site. This sets one determined price for all work done for the project. These construction contracts are also called “fixed price” or “stipulated sum” contracts.

Incentives are sometimes built into these contracts to reward the builder if the job is completed ahead of schedule. These agreements can also include penalties, sometimes called “liquidated damages,” for a job that is completed late. Owners typically use these types of contracts to steer clear of change orders for any additional or otherwise undetermined work.

When signing a lump sum contract, the builder takes on additional risk since the owner is not obligated to pay more than the original price if the project goes out of scope, problems come up or any other changes occur during the project. Some lump sum contracts account for this by including separate allowances that cover unforeseen costs and changes.

If an owner decides to use a lump sum contract on a project, builders can typically charge a higher fee to account for the additional risk they are taking on. Otherwise, any unforeseen costs can either eat into a builder’s profit or result in a project that may not be completed as envisioned.

The study examined the effect of contract management practices on its effectiveness in relation to contract formulation practices, contract management practices, and contract administration

practices. The study tried to explore detail important concepts in relation to the research objective in consideration.

The objective of the study was to investigate the effect of contract formulation practices on contract administration effectiveness on the project site. Through the descriptive statistical analysis, an overall mean score was computed for contract formulation practices. According to the analysis result, the study revealed that the overall mean and standard deviation of contract formulation ( $M=3.58$ ,  $SD= 0.59$ ) was relatively the most practiced contract activity in the Ajamba construction project site. The second objective of the study was describing implementation of contract administration on the effectiveness of condominium project office.

### **5.3. Conclusions**

Based on the findings presented in previous sections, the study drawn the following conclusions. From the descriptive statistical analysis result regarding the state of contract management practice the study concluded that:

- Contract management practices (contract formulation practices, contract management practices and contract administration) were practiced in the project
- In addition, the study concluded that contract management practices contributed to the condominium project effectiveness to a moderate extent.
- All contract management practices namely contract formulation practices, contract management practices and contract administration has strong relationship with construction projects effectiveness.
- The independent variable of contract formulation practices had predicting power on contact effectiveness. Contract management practices and contract administration practices have effect on constructions project goal.
- Contract formulation, contract management, contract administration more affects the contractual effectiveness; contract formulation practices had higher relative effect on construction building projects.

## 5.4. Recommendations

Depending on the findings of the study and conclusions made, the researcher came up with some important recommendations that can be used to influence effective contract management towards construction contract administration.

The findings of the study Ajamba construction site office adopted contract management practices. Moreover, the study confirmed that contract management practices had strong positive relationship with construction projects effectiveness. Therefore, the study recommends the construction/project office to give priority and enhance the contract management practices

because if properly practiced, they can significantly improve its contract administration effectiveness from the current position.

The study therefore recommends:

- Assign professional and skilled personnel for the contract administration.
- Giving more attention to contract formulation, to benefit from the positive impact of contract formulation practices for effective contract administration.
- There should be post contract evaluation strategy so as to improve the failures in future contract management. A post contract review is always an appropriate tool.

## REFERENCES

- ANAO. (2007). Developing and managing contracts: Getting the right outcome and paying the right price. Department of Finance and Administration, Australian Government Printing Office.
- Athumani, B. A. (2018). Effectiveness of Contracts Management on value for money in Public procurement of goods in Tanzania: a case of Ministry of Agriculture. *International Journal of Economics, Commerce and Management*, VI, 223.
- Contract, Specification and quantity survey Lecture note by Abraham Assefa, Department of Civil Engineering, FoT, AAU, and 2001 AY
- Clough, R.H (1996). *Construction Contracting* 4<sup>th</sup> Edition, John Willey and Sons
- IAPWG. (2006). *UN Procurement Practitioner's Handbook*. UN: IAPWG.
- Hanga, M. (2008). *Analysis of Contract Management Practices, a case of Tanzania airports Authority (TAA)*. Dares Salaam:Mzumbe University: Unpublished MBA CM Dissertation
- John McMullan (2019). *Construction Contract Administration Principles: Guide to Construction Contract Professionals*, South Melbourne Vic Australia
- Kasim Seid (2008), *Study of the problems of construction conditions of contract for public Works in Ethiopia*, MSc. Thesis, and Addis Ababa University, Ethiopia.
- Kerzner, H., (2003) *Project Management: A Systems Approach to Planning Scheduling and Controlling*.
- Moavenzadeh F., Rossow J., *the construction industry in developing countries*, Massachusetts Institute of Technology, 1976
- Mitambo, J. (2009). *Procurement Contract Management In Public Organization In*

Tanzania, the case of PPF. Dares Salaam: Mzumbe University:

Unpublished MBA-PLM Dissertation

Nallaperumal, K., (2018). Engineering Research Methodology: A Computer Science and

Engineering and Information and Communication Technologies Perspective

Project Management Institute. 2008, A guide to the project management body of

Knowledge (PMBok®), fourth edition, USA

The ministry of works and urban development, General conditions of contract for construction of civil work projects, Ethiopia, December 1994.

Tecele H. and Mehelet S. (2009) Construction Law, Teaching Material

The World Bank, (2018) Procurement Guidance, Contract Management Practice, Washington DC 20433, USA

Wami, L. (2009). Effectiveness of Procurement contract management process: the case of

President's Office-Public Service Management (Po-PSM). Dares Salaam: Mzumbe

University. Unpublished MBA-PLM Dissertation.

Wubishet Jekale Mengesha (2006); Performance for Public Construction Projects in

Developing Countries, Federal Road and Educational Building Projects in Ethiopia,

2004, Norwegian University of Science & Technology, Norway

Wondwossen W. (2009). The Law of Administrative Contracts, teaching Material,

University



# APPENDIX



SCHOOL OF GRADUATE STUDIES

MA in Project Management Program

Title: study of construction contract administration

In Addis Ababa city residential building projects;

## Questionnaire

Dear Participant,

This research survey is designed to fulfil an academic research paper requirement for the partial fulfilment of M.A in Project Management at St. Mary University. I am undertaking a research study entitled “study of construction contract administration practices in Addis Ababa city residential building projects: A case to Ajamba condominium project site”. I can assure you that the research data will only be used for academic purposes. Particular mentioning of names will not be required anywhere. Your open and prompt response is highly grant value of the survey. For any clarification on this questionnaire, please contact the researcher on the address below.

Thank you for your invaluable time and cooperation.

Requested by: Lemi Teferi

Phone: +251912866351

Email: lemiteferi@gmail.com

Advisor: Muluadam Alemu (PhD)

Section I. General background

Questionnaire to respondents, which help to see experience and exposure of the respondent that makes the research data confidential or qualifying to analyse further.

1. Name of organization: \_\_\_\_\_

2. Role in organization:

1. Employer                       2, Contractor                       3, Consulta   
4. Clier                       5. Other (Please specify) \_\_\_\_\_

3. What is your educational status?

- 1) Diploma                       2) TVET certificate                       3) BSc.   
4) MSc.                       5) PhD

4. Which of the following best describes your current position?

- 1) Project manager                       2) Supervisor                       3) Office engineer   
4) Site engineer                       5) Resident engineer                       6) Contract administrato   
7. Project Coordinator Other

5. Your general work experience in building construction

- 1) < 5 years                       2) 5 – 10 years                       3) > 10 years

6. Your work experience in relation to construction project procurement and bid evaluation process?

- 1) < 5 years                       2) 5 – 10 years                       3) 10 -15 years                       4) ≥15 years

Section II:

The following survey questions are designed to assess the usage / factors/challenges of construction contract administration practices in the public construction in Addis Ababa building projects; a case of Ajamba condominium projects. Please consider each question in terms of your organization's experience and/or your personal knowledge. Please indicate your

response by ticking (X or ✓) mark at the appropriate box (es) the extent to which you agree with the following statements and give your personal answers for open ended questions.

**Scale of Agreement**

**1= strongly Disagree**

**2= Disagree**

**3= Moderately Agree**

**4= Agree**

**5= strongly Agree**

2.1. In general, how do you describe the performance of the Ethiopian Construction?

1. Very Good  2. Good  3.Bad  4.Very Bad

5.Other(Please specify) \_\_\_\_\_

If your answer is bad, what challenges may have contributed in your opinion for the poor competence? (Please check all that apply in your point of view)

- 1.  Lack of competent and experienced professionals in the field
- 2.  in appropriate and malpractices in the industry (fraud, corruption etc.)
- 3.  Absence of clear policy and regulations to properly guide the industry
- 4.  Scarcity of resources (capital, material, equipment etc.)

5. Other (Please specify) \_\_\_\_\_

2.2. Proper administration of construction projects is vital to optimize cost, quality and time.

How do you rate construction management practices in Ethiopia to achieve these goals?

1. Competent  2. Fairly Competent  3. Incompetent

If it is incompetent, what factor(s) do you believe behind the problem?

- Lack of professional, technical and managerial skill
- Limited professionals/firms for too many construction projects

Too many consultant and management firms for few construction projects

Negligence to provide the service as per the specified conditions

Other (Please specify) \_\_\_\_\_

2.3 Contract administration is critical for smooth progress to execute the project according to the planned schedule. Do you feel contract administration meet the acceptable standard?

1. Strongly Agree  2. Agree  3. Disagree  4. Strongly Disagree

If you are in disagreement, where do you think the problem arises?

1.  The contract/contract forms used

2.  Problems attributed to the Employer/Engineer

3.  Problems attributed to the Contractor

4. Other (Please specify) \_\_\_\_\_

No	General questions	1	2	3	4	5
1	Your organization has effective contract formulation performance.					
2	The purposes and scope of the contracts are well defined and communicated in prior of the final dates					
3	The total effort spend during the contracts are well understood by both parties					
4	In the preparation of the contract document all the necessary components are incorporated and prepared by the professional person.					
6	All terms and conditions are always included in the contract formulation stage.					
7	Accurate specification of requirements and quality standards are well described in the contract document.					

8	There is effective Contract Management practice in your organization.					
9	There is On time delivery of goods because of good contract management practice.					
10	There is post-contract evaluation in your organization.					
11	Contract administration is one of the most emphasized areas in public contracting.					
12	Time Schedule for the Contract is Strictly followed.					
13	The agreed quantity and quality was delivered on time.					
14	Preparing contract documents?					
15	Contract Conditions					
16	commercial terms and pricing arrangements					
17	scope of work					
18	project execution plan					
	Overall causes delays					
19	Selecting an Appropriate Contract Format					
23	Late material supply					
24	Financial difficulties faced by the contractor					
27	Delayed payments to contractors					
28	Poor site management					
29	Ineffective planning and scheduling of project					
30	Late Design Review & approval					
31	Slowness in decision making process					
32	Progress on payments					
33	Revising and approving design documents					
34	Cost overruns (Additional cost)					
35	How do you rate supervisor?					
	<b>Contractual-relations</b>					
36	Construction/Contractual management					
37	Lack of communication between parties					
38	Nomination of sub-contractors and suppliers					

39	Delay in performance of subcontractors					
40	Which of the following conditions has negative impact on your motivation to execute your duties?					
41	Contract condition					
42	Payment process					
43	Access to finance					
44	Inspection					

Please kindly check no points are escaped.

**Thank you very much for time and cooperation!**

## Project Pictures- Ajamba Condominium Project Site



Figure I: Ajamba Condominium Project Site (Kara-Kore)



Figure II: Ajamba Condominium Project Site (Kara-Kore)