

**AN ASSESSMENT OF CONSTRUCTION CONTRACT
ADMINISTRATION PRACTICES IN CONCRETE POLE
FACTORY EXPANSION PROJECTS OF KABEW
CONSTRUCTION PRIVATE LIMITED COMPANY**

Martha Teshome Dinku



A Research Paper Submitted to
Project Management Master's Program

Advisor: Adane Atara (PhD)

Addis Ababa University School of Commerce

Addis Ababa, Ethiopia

July, 2019

DECLARATION

I declare that this research report on **An Assessment of Construction Contract Administration Practices in Concrete Pole Factory Expansion Projects of Kabew Construction Private Limited Company** is my own original work, except where due reference is made and neither has been nor will be submitted for the award of a degree by any other university, with assistances and guidance from my Advisor. I further declare that all the latest and up-to-date sources and references used in this research report have been properly recognized and acknowledged as in-text- citation and reference list.

NAME: MARTHA TESHOME

SIGNATURE:

PLACE: ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS & ECONOMICS

SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGMENT

DATE:

LETTER OF CERTIFICATION

This research paper has been submitted for examination as with my approval as the university Supervisor

SIGNATURE.....

DATE.....

Adane Atara (Ph.D)

ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS & ECONOMICS
SCHOOL OF COMMERCE

This is to certify that the thesis prepared by Martha Teshome, entitled: An Assessment of Construction Contract Administration Practices in concrete pole factory expansion projects of Kabew Construction private limited company submitted in partial fulfillment of the requirements for the degree of Master of Arts in Project Management complies with the regulations of the university and meets the accepted standards with respect to originality & quality.

Signed by the Examining Committee

_____ Examiner	_____ Signature	_____ Date
_____ Examiner	_____ Signature	_____ Date
_____ Chairman	_____ Signature	_____ Date

Chair of Department or Graduate Program Coordinator

TABLE OF CONTENTS

ABSTRACT.....	vi
ACKNOWLEDGEMENTS	vii
ABBREVIATIONS/ACRONYMS.....	viii
LIST OF TABLES & FIGURES	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the study	1
1.2 Organizational Profile	4
1.3 Statement Of the problem	5
1.4 Research Questions	6
1.5 Objectives of the study.....	6
1.5.1 General Objective.....	6
1.5.2 Specific Objectives.....	6
1.6 Significance of the Study	7
1.7 Scope Of the study	7
1.8 Limitation Of the study	7
1.9 Definition of Terms.....	8
2 Organization of the study	8
CHAPTER TWO: REVIEW OF RELATED LITERATURE.....	9
2.1 Theoretical Review	9
2.2 Empirical Review.....	9
2.2.1 Contract Formation Principles	10
2.2.2 Contract Types	12
2.2.2.1 Price-Based Contracts	12
2.2.2.2 Cost Reimbursable Contracts.....	13
2.2.3 Understanding the contract documents	17
2.2.4 Administering the construction based on the delivery method chosen	17
2.2.5 Selecting appropriate method of Contracting.....	21
2.2.6 Considerations for creating contracts	22
2.2.7 Fulfilling the appropriate roles & responsibilities of each of the participants	24
2.2.8 Critical Success Factors in Contract Management	26
2.2.9 The Issue of Building Construction Quality.....	27
2.3 Conceptual Framework.....	29

CHAPTER THREE: RESEARCH METHODOLOGY	30
3.1 Data Sources and Data Collection Techniques	30
3.2 Research Design & Approach.....	30
3.3 Sampling Procedure	30
3.4 Data Analysis Methods	31
3.5 Ethical considerations	31
CHAPTER FOUR: RESULTS AND DISCUSSION	32
4.1 Overview of the concrete pole factory expansion projects	32
4.2 Actual Practices of the Construction Contract Administration of the Expansion Project.....	33
4.3 The Need for Project Management Office	41
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	45
5.1 Summary of Findings.....	45
5.2 Conclusions.....	46
5.3 Recommendation	46
5.4 Implication for further study	48
References.....	49

ABSTRACT

This project work is about an assessment of construction contract administration practices in concrete pole factory expansion projects of Kabew Construction Private limited company. Thus, the researcher came up with a major research gap of which the effectiveness of the force account contract administration on the project's time, cost, quality management, team members accountability, authority and handling of variation of work . The methodology used convenience sampling & was designed as semi-structured interview and two principal ways of conducting research are used for the analysis; namely; through the methods of literature review and interviewing “experts” in the subject; where, narrations method is used for the reformulation of stories presented by respondents taking into account context of each case and different experiences of each respondent with content analysis. For triangulation, secondary data were also greatly used .The qualitative research came up with a finding that principal or owner commitment, competence & experience of the contract administrator, understanding contract documents, frequent meetings & communications, regular quality assurance & control, adequate human resource capacity & 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. Moreover, critical success factors in contract management that can provide valuable recommendations for improving organizational success in managing projects & contracts are covered. Disadvantages of the force account construction contract administrations which have significantly affected the progress of the expansion project and other related issues are properly assessed.

Key Words: Construction contract, force account, contract administration, contract delivery methods, concrete pole factory

ACKNOWLEDGEMENTS

I would like to thank GOD for giving me the strength and courage to complete this research. I would like to pass my gratitude to my advisor Adane Atara (PhD) for spending his precious time in reading this thesis and offering me constructive suggestions.

I am deeply grateful to five “anonymous” reviewers for who have given me assistance in obtaining the information and data related to this work, although any errors are my own and should not tarnish the reputations of these esteemed persons. I would also like to thank Maru Bekele (PhD) and Fisseha Assefa (Ass.Prof.) for their comments & constructive criticism of this research paper.

Last but not least I would like to express my gratefulness for my family especially to my dear mom Elizabeth Alemayehu Kassa & to my dear friends who are always by my side.

ABBREVIATIONS/ACRONYMS

ADLI-agricultural development led industrialization

QA-Quality Assurance

QC-Quality Control

BaTCoDA- Building and Transport Construction and Design Authority

EEPCO-Ethiopian Electric Power Corporation

GTP-Growth and Transformation Plan

MDG-Millennium Development Goals

MoWUD- Ministry of Works and Urban Development

GCC General Conditions of Contract

KPI-Key Performance Indicators

PDM-Project Delivery Method

PLC-Private Limited Company

PMO- Project Management Office

PPA- Public Procurement Agency

PSCP-Pre-stressed spun concrete poles

SBD- Standard Bidding Document

SCC- Special Conditions of Contract

SE4ALL-Sustainable Energy for All

SNNPR-Southern nations, nationalities and people's region

UEAP-universal electricity access program

LIST OF TABLES & FIGURES

LIST OF TABLES

Table 2.1-Construction Contract basic activities and considerations for each phase

Table 2.2-A comparison of the contract management success factors

Table 4.1- Qualification & experience of existing management staff

Table 4.2-Most common Key performance indicators (KPIs) for Project Management Offices (PMOs)

CHAPTER ONE: 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 the recent 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 whom

the job is being done), the financier, the project manager, various consultants and designers to contractor, subcontractors and suppliers. Most form a contract with the principal while some, notably subcontractors and suppliers, form a contract with the main contractor. Construction projects, particularly those in the building sector of the industry, are characterized by a multitude of individual contracts (Uher and Davenport, 2009).

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).

The construction industry is notably different from other industries. Particularly, the industry's products must be custom-made to suit the problem for which a solution is sought. Secondly, because the industry's products require the integration of ideas and products of many professionals, problems do arise in managing the interface of the different professionals as well as their products. The relationship between clients and contractors often presents a serious management problem. In many cases, contractors indulge in opportunistic behaviors by attempting to explore and exploit gaps in the contract framework to increase his profits. Clients on the other hand sometimes unreasonably expect the contractor to do extra work at the same price (Uyinmwen and Ogbu, 2018).

Those terms, which the parties overlooked and did not expressly stated in writing or conduct to include making a contract, are termed as implied terms. These terms do not appear in the parties' agreement but are incorporated into construction contracts by operation of law when required by the substantive law governing the parties' agreement. The breach of these implied duties and obligations can provide the Contractor with a remedy in the form of additional compensation and a defense to Owner claims for construction delays or deficiencies in the work. Similarly, a breach of the implied duties and obligations of the Contractor can provide the Owner with a defense or an independent claim for damages (Surahyo, 2018).

It is generally believed that subcontracting improves the productivity of construction facilities by virtue of specialization. However, construction is a high-risk industry subjected to economic fluctuations and characterized by a high level of competition, the lack of skilled labor, and unsavory industrial relations. Under these conditions the assumption that subcontracting improves productivity may not hold (Uher and Davenport, 2009).

According to Uher and Davenport (2009), the 'terms of payment' condition exposes subcontractors to the greatest degree of risk. The exposure is most severe under the 'pay when paid' condition, which provides for a payment to the subcontractor only after the general contractor had secured payment from the principal. This condition is commonly inserted in most in-house prepared conditions of subcontract and it gives no guarantee as to when payment will be made. The authors also added that another increasingly common claim being made by contractors is a claim in tort that the contract documents were negligently prepared and contained errors, which resulted in the contractor incurring more expense than anticipated.

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).

One of the main observations of the research work done by Dinku and Kahssay (2003) has been the fact that the Ethiopian construction industry seriously lack qualified engineering professionals with an appropriate level of training in construction management, international contract administration and claims handling. Furthermore, they indicated that delay and disruption in construction works & excessive variation orders are some of the major causes of claims in the industry. It was found in their study that in most of the cases, variation orders are entertained without restrictions.

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. The contractual parties must ensure that the lines of communication are established and kept open

throughout the contract period. The fundamental aspect is to create a workable relationship between the contractual parties. This involves the determination of rules and procedures to be followed in the administration of the contract (Uher and Davenport, 2009).

In order to successfully support the collaborative effort on a project, understanding the contract documents, administering the construction based on the delivery method chosen & fulfilling the appropriate roles & 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).

1.2 Organizational Profile

KABEW Construction private limited company (Kabew Construction Plc) is a private limited company founded in 1995 G.C and active in construction business since then with steady growth in capacity and experience. The company has been established with capital of Ethiopian Birr 10,000,000 (Ten Million Birr). Both the shareholders are Ethiopians with 55% and 45% share respectively. The shareholders are members of the board of management of the company.

After years of experience, the company has restructured itself to better involve in the fields of building construction works, electro-mechanical projects design, supply, erection and commissioning works. It is capable of managing & undertaking civil construction works (construction of public and private buildings, facilities, power projects, pole manufacturing, etc.) of any volume in the country.

Its principal place of business is in Addis Ababa, Ethiopia and works throughout the country. The company has got engineering, design and administrative offices in its head office in Addis Ababa, Bole Sub City. It has also got own construction plants, equipment, and workshops for processing metal and wood works.

Kabew Construction Plc is also one of the pioneers in the manufacturing and sale of concrete poles. The Company participates in bids for tenders of civil construction & manufacturing and supply of pre-stressed concrete poles through open competition and is one of the major sellers of the product mainly to Ethiopian Electric Power Corporation (EEPCO). The existing factory located in Hawassa was established in 2007 and the expansion projects are located in three places at Oromiya regional state and Southern nations, nationalities and people's region (SNNPR). The projects are implemented simultaneously following the new sales award the company got from EEPCo on 12th of June/2014. The contracts are: UEAP 02/06 Lot 09 Arbaminch, UEAP 02/06 Lot 11 Kibremengist & UEAP Lot 14 Balegoba which is to design, manufacture, test & deliver concrete poles of different size to the respective regions.

Information available from the website (world bank, 2019) World Bank, Sustainable Energy for All (SE4ALL) database from the SE4ALL Global Tracking Framework led jointly by the World Bank, International Energy Agency, and the Energy Sector Management Assistance Program reveals that during the year 2012 the national average electrification of Ethiopia was only 28.4% with over 66 Million people without electricity. To combat the situation the government of Ethiopia designed a 25 year master plan to aggressively work on power generation, transmission & distribution (Ezega News, 2012).

The major output of the concrete pole manufacturing plant is both low voltages and medium voltage 8, 9, 10, 11 & 12 meter height concrete poles.

1.3 Statement Of the problem

A multi million worth project planned to be completed by Kabew, a private limited company, failed to deliver on time. At the start of these projects, the company had a vision of being one of the largest suppliers of concrete poles in Ethiopia, even in East Africa. The company believed that the project was to significantly contribute to the company's corporate plan of having a steady 10% growth of turnover. The major consumer of the product (concrete poles) is the government. If the project succeeded, it would have contributed to the Growth and Transformation Plan (GTP) of the Ethiopian government regarding electric power distribution. The GTP envisioned Universal Electricity Access Program (UEAP) to electrify wider area of both urban and rural parts of the country as part of achieving the Millennium Development Goals (MDG).

The project delivery system for a construction project is often selected according to project management team's previous experience. This might lead to a vicious circle where the same problems, such as cost and schedule overruns, are faced in successive projects (Pöyhönen, P et al, 2017).

The researcher assumed that there was a major gap in the effectiveness of the force account contract administration on the project's time, cost, quality management, team member's accountability, authority and handling of variation of work. Therefore, this study was carried out to further assess the existence of the assumed gap and factors associated with the gap.

1.4 Research Questions

Based on the problem that has been stated the following research questions are developed.

- 1.4.1 How does the construction contract administration practice of concrete pole factory expansion projects in the case company look like?
- 1.4.2 Is the company's chosen delivery system appropriate to the expansion projects?
- 1.4.3 How do the human resource capacities of the construction contract administration unit of the case company look like?
- 1.4.4 How do project participants' roles, responsibilities & given authority in administering the construction based on the chosen delivery method look like?

1.5 Objectives of the study

The general and specific objectives of this study are as stated below:

1.5.1 General Objective

To study the construction contract administration practices in the case of concrete pole factory expansion projects located in Arbaminch, Balegoba & Kibremengist.

1.5.2 Specific Objectives

The specific objectives of this research are:-

- 1.5.2.1 To examine the construction contract administration practice of concrete pole factory expansion project of the case company in different phases of the project delivery process.

- 1.5.2.2 To examine appropriateness of choice of contract delivery method for the expansion projects
- 1.5.2.3 To examine the human resource capacity of the project implementing unit of the case company
- 1.5.2.4 To examine the project participants roles, responsibilities & authority in administering the construction based on the delivery method chosen

1.6 Significance of the Study

The expected outcomes of the study are:

- Give an insight about the practice of construction contract administration practice at the concrete pole factory expansion project in the case company.
- Indicate importance of adequate human resource capacity, administering the construction based on the appropriate delivery method chosen & giving appropriate roles, responsibilities with authority for project participants are very important in order to successfully support the collaborative effort on a project
- Present a relevant suggestion on any gap observed to the case organization & others

1.7 Scope Of the study

This study is delimited to construction contract administration practices in the concrete pole factory expansion projects of Kabew Construction Plc located in Arbaminch, Balegoba and Kibremengist, Ethiopia. It mainly dwells on the force account delivery system exercised by the case company to deliver the expansion projects. Besides, the study is delimited to importance of having adequate human resource capacity, choosing appropriate delivery method for the project & appropriate roles, responsibilities with authority for project participants in order to successfully support the collaborative effort of a project.

1.8 Limitation Of the study

Scope of the study is limited to concrete pole factory expansion project under a private limited company. Only the documents availed by the private limited company is used for desk review of the study. Since the project lapsed for more than four years, the way they archive data and finding some participants of the project was challenging. And since convenience sampling is used here, deploying the knowledge, skills and judgment of the the researcher is used to determine the sample size of key executive officers among these major

stakeholders. In addition, time constraint is another limitation of the study since a short calendar time has been set to finalize it.

1.9 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 (Surahyo, 2018).

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 (Surahyo, 2018).

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).

Specifications: Specific written requirements for the work that is going to be performed which is broken down into each work result (PPA, 2006)

Critical success factors: Are identified as limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization (Rendon, 2010).

Project management office: An organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (PMI, 2017).

2 Organization of the study

The first chapter of the paper discussed the introduction; followed by the literature review section. Then the third chapter is the research methodology and the fourth chapter being the presentation, analysis and interpretation of data. On the final fifth chapter summary, conclusions, recommendations and suggestions are given for further research doings.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Theoretical Review

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 both contractual and legal obligations on both parties 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. Standard forms are based on generally accepted professional and industry norms and are fair and balanced. Another reason for using standard general conditions is that they provide language and provisions that have been tested in practice as well as in the courts. They are well understood and familiar to all parties involved in the construction (Surahyo, 2018).

2.2 Empirical Review

According to Gezahegn (2011) the evolution of conditions of contract in Ethiopia dates back to 1959. The first ever conditions of contract prepared by MoUDH in July 1959 was entitled 'General conditions of Construction Contracts'. The Standard Conditions of Contract for Construction of Civil Works Projects was endorsed by Building and Transport Construction and Design Authority (BaTCoDA) in December 1987 after three decades since the first one comes into effect. The Standard Conditions of Contract for Construction of Civil Works Projects by Ministry of Works and Urban Development (MoWUD) enacted in December 1994. There was another condition of contract with a title 'General conditions of Contract and Tender Procedure document' drafted by MoWUD in 1995 which was not put into effect. Later, the PPA General Conditions of Contract for the procurement of works version 1 were issued in January 2006. PPA General Conditions of Contract Version 2 issued in April 2011

is the recent contract form issued as part of SDB for international and national competitive bidding.

2.2.1 Contract Formation Principles

Seven elements are generally regarded as essential to the validity of a contract (Uher and Davenport, 2009).

- a) There must be an intention to create a legal relationship
- b) There must be offer and acceptance.
- c) There must be valuable consideration.
- d) The parties must have legal capacity to contract.
- e) There must be a genuine consent by the parties.
- f) The legality of the object of the agreement must be ensured.
- g) The terms of the contract must be sufficiently certain.

- a) Intention

Mutual intent means that the parties involved must have a meeting of minds and decide that they agree to do the things as mentioned in the contract. For this reason, usually a letter of intent is issued that expresses interest in proceeding with negotiation toward a contract. Letter of intent is the informal acceptance of the contract and does not make a binding until the formal “letter of acceptance” is issued (Surahyo, 2018).

- b) Offer & Acceptance

An offer is basically a promise made by one party who agrees to perform a certain task in accordance with specific terms and conditions. The offer may be made verbally; however, it is always preferable to document the agreement in writing. For this reason, construction contracts are mostly made in writing, using one of the standard formats. In construction contracts, most of the consultants/owners demand certain procedures to be followed while submitting an offer, like specific time, validity of date, sealed envelopes, etc. On noncompliance such as incomplete bids, qualified bids, and/or nonresponsive bids, the offer is rejected (Surahyo, 2018).

The agreement must be unequivocal and not propose new terms. Even small, seemingly insignificant issues are sufficient to preclude a determination of mutual assent (Thomas and Ellis, 2007).

Once an offer has been provided, it will become a binding contract; if it is accepted, it means that it has been executed or signed by the other party. The acceptance of offer must be made clear/unambiguous and unconditional; otherwise it will not be treated as a binding offer or acceptance. (Surahyo, 2018)

c) Consideration

Contracts are economic exchanges; therefore, something of value must be exchanged. Valid contracts require considerations or an exchange of something of value; this rule is sometimes called the preexisting duty rule. Courts typically validate a transaction where an exchange took place, even if the exchange is unequal, because one party is providing something of little value (Thomas and Ellis, 2007).

d) Capacity

A contract should only be made by parties capable of fulfilling their intended role. Under the law, not everyone has the necessary capacity to enter into an agreement. A party to an agreement can be considered to lack the capacity resultant from lunacy, drunkenness, mental disorder, etc. Corporations also cannot enter into a binding contract if it is beyond their stated powers. Hence, when dealing with corporations, the Engineer must be careful to determine the nature of the corporation. The contract will not be legally enforceable if it is beyond the stated powers of the corporation (Surahyo, 2018).

e) Consent of parties

An underlying concept of a contract is that the parties have voluntarily consented to make a legally binding agreement. An 'agreement' made at the point of gun is made under duress and is not a contract. It is not uncommon for a party to a contract to be mistaken as to certain of its terms. Where that mistake has not been caused by any misleading or deceptive conduct of the other party, the mistaken party will usually have no remedy (Uher and Davenport, 2009).

f) Legality

If the purpose of the contract is unlawful, i.e., illegal, it will not be enforced. A void contract creates no legal rights and therefore cannot be sued upon. If a contract is procured by duress or fraud, if it's one sided, where the terms are unreasonably favorable to one party. Unenforceable contracts are in fact valid; however, due to omission of required formalities, a

party seeking to enforce it will be denied a remedy. To make a contract enforceable, it should also be free from immoral or criminal purpose and should not contain such clauses that are against public policy.

2.2.2 Contract Types

The Most commonly used types of construction contracts are price based contracts & cost based contracts (Surahyo, 2018).

1. Price based: Lump sum or unit price contracts, in which the prices are quoted by the Contractor at bidding stage.
2. Cost based: Cost reimbursable contracts, in which the actual costs incurred by the Contractor are reimbursed together with a fee to cover overheads and profit.

2.2.2.1 Price-Based Contracts

- a) **Lump Sum Contract:** A lump sum contract, also called stipulated price or fixed price 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 markup in order to take care of unforeseen contingencies (Surahyo, 2018).

- b) **Unit Price Contract:** According to surahyo (2018) A unit price contract is the traditional system and most popular in both the building and civil engineering sectors. Under this form, the detailed bill of quantities is prepared by the quantity surveyor of the Consultant based on drawings and specifications. The contractors quote their rates against these calculated quantities on basis of unit rate method. However, the contractors are paid for the work measured in place on the basis of actual quantity multiplied by quoted rate. In this type, the Owner takes the risk of changes in the quantities originally estimated. The final cost of the project is not known to the Owner until completion of the project. As per PPA (2006) GCC clause 38.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change

exceeds 5 percent of the Initial Contract Price, the Engineer shall adjust the rate to allow for the change.

2.2.2.2 Cost Reimbursable Contracts

Also known as cost plus contract, this type entails Contractor reimbursement of the actual cost of carrying out the work plus an additional amount in the form of fees to cover his overheads and profit. The Contractor's fee is calculated in various ways such as:

- a) Cost plus percentage fee
- b) Cost plus fixed fee
- c) Cost plus variable fee
- d) Guaranteed maximum price or target price contract
- e) Time and material

a) Cost plus Percentage Fee 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).

b) Cost plus Fixed Fee Contract

Under this type of contract, the Contractor will receive the actual direct job cost plus a fixed fee and will have some incentive to complete the job quickly since its fee is fixed regardless of the duration of the project. However, the Owner still assumes the risks of direct job cost overrun, while the Contractor may risk loss of profit if the project is delayed beyond the expected completion time (Surahyo, 2018).

c) Cost plus Variable Fee Contract

For this type of contract, the Contractor agrees to a penalty if the actual cost exceeds the estimated job cost or a reward if the actual cost is below the estimated job cost. The Contractor's fee is made up of two parts: a fixed amount and a variable amount depending upon the relationship between the target cost and the actual cost (Surahyo, 2018).

Furthermore, the project duration is usually specified and the contractor must abide by the deadline for completion.

This type of contract allocates considerable risk for cost overruns to the Owner but also provides incentives to contractors to reduce/control costs as much as possible but has the disadvantage of requiring the target cost to be fixed on the basis of a rough estimate.

d) Guaranteed Maximum Cost Contract (GMC Contract)

On some projects where the scope is well defined, the Owner and the Contractor agree to a project cost guaranteed by the Contractor as maximum, also known as a ceiling price. In this system Contractor takes all the risks, both in terms of actual project cost and project time. Thus, a guaranteed maximum cost arrangement imposes a penalty on a Contractor for cost overruns and failure to complete the project on time. With a guaranteed maximum price contract, any amounts below the maximum are typically shared between the Owner and the Contractor, while the Contractor is responsible for costs above the maximum (Surahyo, 2018).

e) Time-and-Material (T&M) Contract

Under this contract, the Contractor is paid on the basis of actual cost of labor at fixed hourly rates, actual cost of materials and equipment used, and agreed-upon markup to cover the Contractor's overhead and profit. T&M is commonly known as "Force Account." T&M contracts contain aspects of both contract categories (cost reimbursable and fixed price). They resemble fixed price type arrangements in that they are priced on fixed hourly rates, and they also resemble cost reimbursable type arrangement because they are open ended as the total cost of material and equipment is unknown. Work on a T&M basis is considered mostly during construction, when the scope of work cannot be well defined. T&M contracts are not considered beneficial because the Contractor is paid for the number of hours actually used to perform the job and cost of material installed. Hence, the Contractor has no incentive to control material costs or manage the labor force efficiently. Therefore, proper surveillance on the Contractor is required to assure that the Contractor is performing efficiently and using effective cost control measures. Daily work records must be prepared either by the Contractor or by Contract Administrator reporting the labor and equipment employed and the material used and signed by both parties on a daily basis. It is also advisable that the contract shall include a ceiling or not-to-exceed price. Under this arrangement, the Contractor will be bound to charge for labor and material up to a certain maximum and will assume the excessive costs.

Cost reimbursable contracts are suitable where Owner has trust in the Contractor and in situations where overall scope of work is not clear at initial stage and where increased frequency of additions and alterations is expected or on emergency work projects. Cost reimbursable contracts allow contractors early involvement at the design stage and allow Owner's participation in contract management.

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. The contractual parties must ensure that the lines of communication are established and kept open throughout the contract period. The fundamental aspect is to create a workable relationship between the contractual parties. This involves the determination of rules and procedures to be followed in the administration of the contract (Uher and Davenport, 2009).

The Contract Administrator is the individual responsible for administering the construction contract (s). Contract administration involves numerous tasks occurring before and after contract execution. All work must be administered in accordance with the contract specifications, terms and conditions, provincial and federal laws and regulations, and department policy. The Contract Administrator may be the Engineer or Architect, lead Consultant, the cost Consultant, or an Owner or Consultant's representative (Surahyo, 2018).

Good contract administration is required to manage design specifications, contractual agreements, geotechnical investigations, product quality assurance, competitive tendering, evaluation, cost control, changes, final accounts, claims, and disputes. The Contract Administrator should possess thorough knowledge and understanding of the standard specifications, building codes and standards, project plans, construction techniques and methods, ability to understand and interpret the Contract Documents, and ability to communicate, negotiate, and resolve disputes and understand the administrative procedures established in the Contract Documents (Surahyo, 2018).

Construction contract administration impacts project outcomes significantly. Globally, contract administration documents have been proliferated in attempts to deal with the different challenges that evolve during contract implementation. However, contract administrators usually lag behind in adopting the latest approaches to construction contract management due to lack of or limited information.

When constructing a project, many parties/specialists are involved in the process of planning, designing, financing, monitoring, and building. Each of these parties has a different role to play, but they are temporarily joined together for certain period by a legal contract. However, taking a construction project from inception through to completion and commissioning requires the concerted and coordinated efforts of three distinct parties: the Owner of the project, the Consultant, and the Contractor (Surahyo, 2018). Under the definitions of the PPA (2006), The “Employer” is the party who employs the Contractor to carry out the Works and means “Procuring Entity” as defined in the Public Procurement Proclamation, The “Engineer” is the person named in the Special Conditions of Contract (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Engineer) who is responsible for supervising the execution of the Works and administering the Contract & The “Contractor” is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer and means “Supplier” as defined in the Public Procurement Proclamation.

There may be indirect or direct communication with the parties as we move through the construction and teamwork plays a vital role to organize and stay on top of the complex environment of a project.

A project team can be defined as a number of people who work closely together to achieve shared common goals. Through interaction and collaboration the team strives to enhance its creativity, innovation, problem solving, decision making, support and work performance (Burke and Barron, 2014).

In order to successfully support the collaborative effort on a project, understanding the contract documents, administering the construction based on the delivery method chosen & fulfilling the appropriate roles & what is expected from each of the participants are very important.

2.2.3 Understanding the contract documents

According to Standard Bidding Document for the Procurement of Works issued by the PPA (Version 1, January 2006), the documents forming the Contract shall be interpreted in the following order of priority:

- (1) Agreement- b/n the designer & the client or the employer & the contractor
- (2) Letter of Acceptance,
- (3) Contractor's Bid,
- (4) Special Conditions of Contract,
- (5) General Conditions of Contract,
- (6) Specifications: Specific written requirements for the work that is going to be performed which is broken down into each work result
- (7) Drawings: the Architectural, Structural, Sanitary, Electrical, mechanical, 3D representations of the whole project
- (8) Bill of Quantities or Activity Schedule, and
- (9) Any other document listed in the Special Conditions of Contract as forming part of the Contract.

It is important to become engaged in the projects during their development & during the drawing phase of the project, it's not something that waits until construction begins. The group of experts from the field can be brought into the office and inform some of the decisions made in the design process itself.

2.2.4 Administering the construction based on the delivery method chosen

2.2.4.1 Contract Methods

A construction project is a unique individual arrangement of processes that involves various participants with different tasks who are constrained by various factors, hazards and related risks. With that in mind, the right delivery method (form of construction project management and organization) should be selected—with the employer taking the lead role in this decision (Klee, 2018).

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 (Surahyo, 2018).

The impact of risks and how they are distributed among various parties based on different types of contract. Currently there are many procurement trends in the construction industry. 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).

A) Design-Bid-Build Method

This is the most popular and widely used construction method and is also known as the traditional method. With this method, construction is separated from design; hence, the Contractor has no responsibility for design. The Owner/Client contracts with a consulting firm, who designs the project, prepares detailed drawings, specifications, and bill of quantities with the coordination of various specialists. The bid documents are prepared and the project goes out for bid, and the contract is usually awarded to the lowest bidder. Thus, it gives rise to two different agreements: one between the Owner and Consultant and the other between the Owner and the Contractor (Surahyo, 2018).

B) The Design and Build Method (DB)

Under this method, the Owner awards an entire project to a single entity, who takes overall responsibility for both the design and construction of the project. The Owner establishes project requirements by issuing an Owner's statement of requirements. The design-build arrangement combines the services of the Consultant/Designer and the General Contractor. The single source responsibility of the design-builder reduces administration claims and litigation conflicts between the design and construction teams as the division of responsibility between them is primarily the responsibility of the design-builder. By working together as a team, the Consultant and Contractor can fast track the process and improve constructability, quality, and innovation potential. All these lead to low cost for the Owner.

Usually there are two general organizational formats for design-builders. First, the Owner may contract with an integrated design-build firm. The integrated design-build firm has Architects, Engineers, and construction professionals, all in-house. The second design-build organizational format is the design-build joint venture. Under this organizational structure, the Designer and the General Contractor enter into a joint venture agreement for the duration of the project (Surahyo, 2018).

C) Other Forms of Design Build Concept

i. The Partnering (Public-Private Partnership (P3))

P3 is a contractual arrangement between two parties mainly a public authority and a private sector for either a specific period of time or an indefinite/long-term period. P3 is not a new form of contract – it is a procedure for making relationships work better. The essence of a P3 arrangement is the sharing of risks. Thus, the desired balance to ensure best value is based on an allocation of risk factors to the participants who are best able to manage those risks and thus minimize costs while improving performance.

In construction, there are many variations of P3s, but generally the setup is: the private entity will be comprised of a design-build team, a maintenance firm, and a landing firm. The most common models of P3s are: Design-build-maintain (DBM), Design-build-finance-maintain (DBFM), Design-build-finance-maintain-operate (DBFMO), Build-own-operate (BOO), Build-operate-transfer (BOT) (Surahyo, 2018).

ii. The Construction Management Method

The term Construction Manager (CM) basically refers to the professional construction management firm that is responsible for managing the entire construction process. Construction management is most beneficial when working on large, complex, and long-term projects where there are likely to be multiple Prime Contractors and the Owner requires extra management resources to control the project. There are many forms of management methods. The role of the CM in a project may vary substantially and can be performed under a variety of contractual terms. However, there are two commonly used approaches to construction management: (1) Construction Manager as Agent and (2) Construction Manager at Risk.

a) Construction Manager as Agent

Under this form of construction management, the Owner contracts with a professional construction management firm who acts as the Owner's agent in the role of a Consultant. The CM is retained prior to the design phase providing preconstruction services such as value engineering, estimating, cost control, schedule analysis and bid review, and undertaking the administrative responsibilities of managing all trade contractors during construction. The CM will not perform himself any particular trade work or other construction works. Under this

arrangement, the Owner contracts directly with the required trade Contractors like a General Contractor to complete the project. Thus there will be three sets of contracts:

1. Owner – CM
2. Owner – Designer
3. Owner – Trade Contractors

A major benefit to the construction management approach is that, under the disciplined scheduling of the Construction Manager, the project may be phased or fast-tracked whereby the design and construction periods are overlapped to permit an earlier start and completion of the construction (Surahyo, 2018).

b) Construction Manager at Risk

Under this form of construction management, the CM is responsible for both services and construction. Under this arrangement, the CM contracts with all the trade Contractors to complete the project. With this method, there are two sets of Contracts by the Owner:

1. Owner – CM
2. Owner – Designer

The CM assumes responsibility for the performance of the trade contracts like a General Contractor under the traditional method and is paid for the work done by trade contractors either on cost reimbursement basis or fixed price basis. The CM is retained prior or during the design phase providing preconstruction and construction services. Under this concept, the CM holds the risk of subletting the construction work to trade subcontractors and guaranteeing completion of the project for a negotiated price following completion of the design (Surahyo, 2018).

D) Force Account Delivery System

According to Shengeza (2018), force account is construction by the use of public or semi-public agencies or departments concerned, where the public or semi-public agency has its own personnel and equipment. According to his literature review, the use of force account may be justified where the force account required works are small and scattered or in remote locations for which qualified construction firms are unlikely to tender at reasonable prices; work is required to be carried out without disrupting ongoing operations; risks of unavoidable work interruption are better borne by a procuring entity or public authority than by a contractor; or there are emergencies needing prompt attention. Also force account method is termed as noncompetitive bid contract where an authorized local municipal agency, generally

described as a county, city, or village, has to complete the project by furnishing the labour, equipment, and materials under its direct control. The benefits of force account include efficiency gains where the entity is able to execute works much faster, enhancement of internal capacity of the procuring entity since works are executed and supervised by the procuring entity staff and cost savings compared to other methods. In order to use force account, it must be ascertained that it is cheaper to execute the works in house as compared to contracting out. Therefore, the procuring entity is able to deliver services at a cheaper cost. However, delivering a high performing project successfully requires that state of practices use an appropriate delivery method. Under this requirement, Shengeza (2018), found a need of having outline procedure for an effective application of force account in government building projects in order to deliver the requirement of ongoing projects.

2.2.5 Selecting appropriate method of Contracting

The informational video released by federal highway administration of the United States of America (2016) on selecting appropriate method of contracting is discussed under this section.

At some point prior to the physical construction of a project a decision is needed regarding how to complete the construction work in the most efficient & cost effective way. There are two types of contracting method; competitive & non-competitive method. Making this decision early i.e. which contracting method to use during project design will ensure our project does not encounter unnecessary delays.

Competitive low bid awards have been the rigid method of engaging contractor services. Construction contracts are to be awarded using fair and open competition, to a responsible contractor who submits the lowest responsive bid. Responsible contractor is the one who has the financial and physical capability to undertake & complete the contract. A responsible bid is one that meets all the requirements of the advertisement that invited contractors to bid.

Other competitive contracting methods like design bid (DB) bid have also been used to secure contractor services. The project owner should evaluate the many alternative contracting methods and should consider the acceptable contracting method for the specific project.

Under certain circumstances, projects can be completed using agency force account procedures this means that the construction work is performed using the labor, equipment, materials and supplies that are under your control without the use of a private contractor.

Possible reasons to consider that method of construction are when there was a lack of competition within the bidding process or an acceptable bid have been received. This method also might be used when it is more cost effective to do the work using agency personnel and for emergency situations. If a project owner chooses to use agency force account procedures, he or she should submit documentation to the oversight agency that supports his or her agency ability to satisfactorily complete the proposed construction work. The purpose of the documentation is to show evidence of satisfactory completion of similar work, the personnel or other resources are available to do the work, the personnel can achieve the acceptable quality that is normally expected within the federal aid highway program, the work can be completed within a reasonable time frame and the cost effectiveness of using agency forces.

Our choice of the method of construction will affect the plans, construction specifications, and cost estimate package that must be approved prior to advancing to construction.

2.2.6 Considerations for creating contracts

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). Table below lists the basic activities and considerations for each phase.

Table 2.1.Construction Contract basic activities and considerations for each phase (Phillips, 1999).

Contract checklist from proposal to completion				
It. No	Phase	Activities	Considerations	
1	Proposal	Initiate	Facility concept	Type Of Contract
		Define	Concept Estimate	Proposed Bidders
		Select	Method Of Award	Bonding
		Submit	Type Management	Insurance
2	Design (Basic & Final)	Plan	Master Plan	Flowsheets
		Estimate	Master Schedule	Estimates
		Present	Management Plan	Budgets
		Review	Work Scope	Drawings
		Approve	Design Criteria	Constructability
		Distribute	Specifications	Invitation to bid
			Purchasing Plan	Instructions to bid
			Document Register	Proposal
3	Award	Organize	Qualify Bidders	Award Procedures
		Select	Bid List	Award Contract
		Process	Bid Procedure	Notice to Proceed
			Addenda	
4	Construct	Direct	Administration	Receiving
		Observe	Progress meetings	Change Orders
		Analyze	Progress Reports	Amendments
		Document	Cost Reports	Payments
		Report	Inspections	Claims
			Testing	Correspondence
5	Complete	Coordinate	Beneficial occupancy	As Built Drawings
		Prepare	Punch Lists	Acceptance
		Schedule	Test Runs	Final Reports
		Execute	Checkout	Final Payment
			Start-Up	Release of retainage
				Transfer of facility to Operators

2.2.7 Fulfilling the appropriate roles & responsibilities of each of the participants

The goals and objectives of each of the main parties to a construction contract are unique and often partially in conflict. In most situations the conflict and related disputes come to surface during the actual construction process. However, if the Owner understands the role and responsibilities of its construction Contractor, it will increase the prospects of a project with minimal conflict and adversity and greater opportunity for success. It is the Contract Documents that contain the definitions of the roles and responsibilities of the Owner, the Consultant, and the Contractor during the construction phase. The Conditions of Contract are the primary source for determining the responsibilities and obligation of all parties. Surahyo (2018) generally mentions the role of each party as stated below

2.2.7.1 Owner/ Employer Role:

1. Identify needs.
2. Set out the parameters that define the project.
3. Establish reasonable goals for the project.
4. Arrange adequate funds.
5. Select appropriate consultants and appoint authorized representatives.
6. Develop and understand reasonable expectations for the project, its goals, and the parties involved in design and construction.
7. Negotiate the procurement package.
8. Arrange timely possession of site to the General Contractor.
9. Develop the understanding of responsibilities of the parties and their risks and providing authority to manage them.
10. Provide timely responses to the Consultant's submissions.
11. Provide timely responses to the Contractor's submittals, request for information, proposed changes, and claims forwarded by Consultant.
12. Issue timely progress payments.

2.2.7.2 Designers/Engineers/Architects role:

1. Determining the feasibility of constructing a project.
2. Preparing preliminary budget and cost estimates.
3. Undertake conceptual, preliminary, and detailed design including site investigations.
4. Developing and evaluating alternatives with respect to design, location, and types of construction.

5. Preparing an environmental assessment and impact studies.
6. Assisting in obtaining approvals of authorities having jurisdiction over the project.
7. Preparation of Contract Documents.
8. Preparation of bid documents and contract formation.

In addition, the Engineer represents the owner, Observes the project and protect the project from unacceptable, non-compliant construction, certifies applications for payment, issues certificate of final completion & certifies that the project is ready to be paid for, interprets the Contract documents, Review & decide claims, Processes modifications to contract documents, Review submittals and inspect.

2.2.7.3 Contractor's role:

1. Supply and provide labor, material, and equipment as necessary to perform the works within the contract period.
2. Provide competent, experienced management and supervision for performance of the work.
3. Comply with all statutory laws and regulations during execution of the works and ensure that all who are employed on the site abide by these conditions.
4. Select and provide the means, methods, techniques, sequences, and procedures of construction.
5. Initiate, maintain, and supervise all safety precautions and programs for all personnel on site and the general public who may be affected by the works. In this regard, the Contractor shall ensure that all personnel on site are adequately trained and observe safe working procedures.
6. Implementation of quality control systems for aspects of the works as specified.
7. Schedule and coordinate the work with other groups like suppliers, subcontractors, etc. working on site.
8. Warrant and guarantee that all work done will be in accordance with the Contract Documents and will not be defective.

In addition the contractor has to maintain record documents at site, indemnify owner & architect against losses resulting from contractor performance of work, furnish owner names of subcontractors, etc.

2.2.8 Critical Success Factors in Contract Management

Rendon (2010) states that critical success factors are identified as limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization.

They have a direct impact on an organization's project management & contract management processes as well as resulting outcomes. His paper presents the results of survey-based research on contract management critical success factors, derived from the responses of approximately 400 contracting officers who represent seven Department of Defense (DoD) agencies.

Table 2.2 Comparison of the contract management success factors (Rendon, 2010)

It. No	Contract management critical success factors (from current research)	Frame's key elements of organizational project management competence	Crawford's analysis of project success factors	Baccarini and collin's project success factors
1	Work force (including including training, organizational setting, experience, promotions, mentoring)	Training and education	team development, organizational structure	competent project team, problem solving abilities, project manager authority
2	Processes	Defined procedures	planning, monitoring & control	Realistic time & cost estimates, adequate project control, risk management, project planning
3	Relationships (including communication, teaming , customers)	Culture of openness	Team selection, communication, stakeholder management	communication, client involvement, teamwork, top management supports, stakeholder involvement
4	Resources	Human & material resources, access to information	Organizational support	Resources, top management Support

5	Leadership	Organizational Vision, Institutionalization	Leadership, strategic direction, organizational support	Top Management Support
6	Policies	Defined procedures, access to information, institutionalization	Strategic direction, organization support	Top Management Support
7	Requirements	Access to information	Project definition, planning	Project understanding, realistic estimates, resources

The result of his research has shown that the contract management critical success factor categories identified in the survey results are similar to critical success factor categories for project management identified in the literature. These research findings of similar success factors for both project management and contract management can provide valuable recommendations for improving organizational success in managing projects and contracts.

2.2.9 The Issue of Building Construction Quality

Quality is project requirements as established in the contract. According to Surahyo (2018), as per a recent survey on quality of construction by FIDIC within member associations in 2001, it was found that quality was frequently adversely affected due to a reduction in the initial costs of construction and supervision. In fact, the contractors and consultants both usually submit low prices to win the tenders but at the risk of being unable to produce and achieve quality work meeting the standard specifications. Lack of quality in construction leads to poor workmanship, and in delays, cost overruns, and disputes in construction contracts.

The project management body of knowledge-PMBOK (2017) states that Project Quality Management includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements, in order to meet stakeholders' expectations. The required standards of quality of a completed project are made during the design and planning stages rather than during construction. These required standards are outlined within the specifications and drawings of the contract.

Quality management on a project is based on processes such as quality planning, quality control, quality assurance, and Quality Assurance (QA)/Quality Control (QC) implementation (Surahyo, 2018).

The quality plan considers: quality assurance, quality control (testing) and nonconformance reporting (Burke and Barron, 2014).

2.2.9.1 Quality Assurance (QA)

Quality assurance is a method for the regular monitoring and evaluation of the various aspects of a project to ensure that standards of quality are being met. An effective QA program is beneficial to the all parties. It includes submittals, certifications and other actions assuring proper products & services. With an effective QA program, the Owner will have more cost control, fewer claims, improved constructability, and faster project delivery with minimum repairs.

According to Surahyo, (2018) in order to implement this process of quality in construction; the following points should be considered before starting the project:

1. Appoint the project management/quality assurance team early with clearly defined responsibilities.
2. Develop a QA system for the project. Indicate which section of the QA team shall develop the QA plan and QA programs at various stages of planning, design, and selection of materials, construction supervision, and material testing.
3. Establish who does what within the organization.
4. Select the people who are qualified for the particular tasks and train the personnel in their responsibilities.
5. Conduct preconstruction meetings to ensure that everyone understands his contract responsibilities and all necessary activities. A preconstruction meeting is important for both the QC and QA programs for smooth running of the project. It establishes cooperative and non-adversarial relations between both parties.

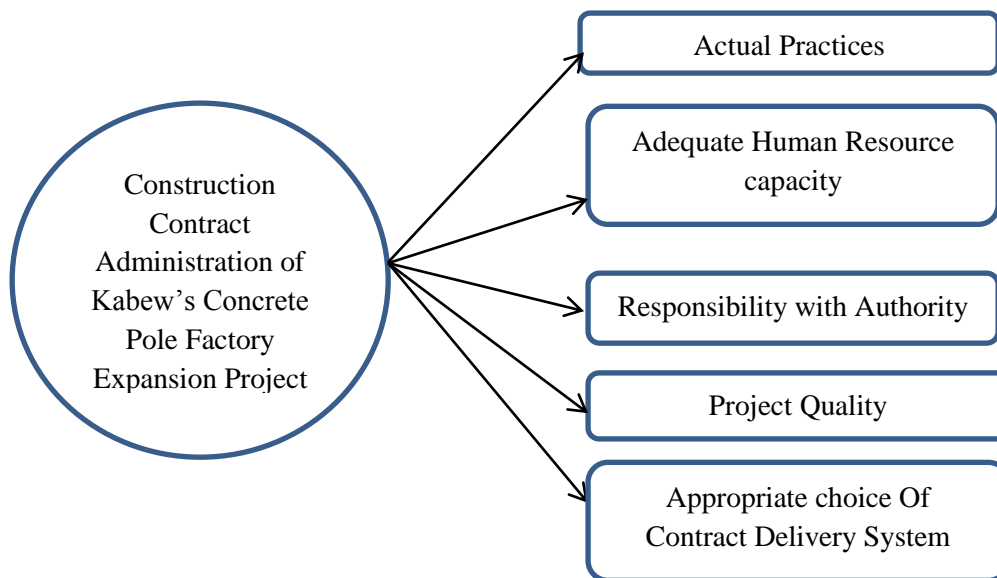
2.2.9.2 Quality control

Burke and Barr (2014) mention that the quality control process mechanism ensures the work is completed to the required condition. It includes procedures for evaluating completed activities and elements of work for overall performance. This includes testing, inspection & potentially the finding & corrective direction of unsatisfactory performance.

For effective quality control, the Contractor defines procedures to manage and control his own forces, his subcontractors, and his suppliers' activities so that the completed project complies with all contract requirements.

Under PPA (2006) GCC clause 33, 34, 35 & 36, the Engineer is responsible to check the contractor's work and notify the contractor of any defects that are found. He also instructs the contractor to carry out a test not specified in the specification to check whether any work has a defect. The engineer shall give notice to the Contractor of any Defects before the end of the defects liability period & every time notice of a defect is given, the contractor shall correct the notified defect within the length of time specified by the engineer's notice. If the Contractor has not corrected a defect within the time specified in the engineer's notice, the engineer will assess the cost of having the defect corrected, and the contractor will pay this amount.

2.3 Conceptual Framework



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Data Sources and Data Collection Techniques

Both primary and secondary sources of data collection mechanism are used. The Construction team on site and the team in office for the expansion project are the major source of primary data collection where semi- structured interview is conducted. The reason for being selecting the interview method is because the number of professional staffs engaged in the project is very few.

As secondary data; main contracts signed between the project owner & subcontractors of this specific project under study are properly reviewed. Correspondences, different reports, project review documents, articles, academic journals and other related publications on the practices of building construction contract administration are used.

3.2 Research Design & Approach

To successfully achieve the research objectives and answer the stated research questions, this study employed qualitative research approach. Qualitative research approach systematically uses a predefined set of procedures to answer the question and seeks to understand a given research problem or topic from the perspectives of the local population it involves. here the research instrument is designed as open ended questions with semi-structured interviews and it assess a problem by taking professionals opinions, view and perceptions on projects that are not being delivered with time and budget scheduled.

3.3 Sampling Procedure

Data is collected from the project owner and subcontractors using the designed methods of data collection technique that is structured interview method. Therefore, the major stakeholders at different levels who are actively participating in the project are the very population of the study. Convenience sampling is used by deploying the knowledge, skills and judgment of the researcher to determine the sample size of key executive officers among these major stakeholders. The respondents were any from the stakeholders as the representativeness of each respondent is granted by the non-random sampling method.

The study uses purposive sampling techniques. This is basically because the respondents of the project stakeholders are exclusively relevant to the specific study, in which higher professionals and project experts were specifically selected for the interview.

The time constraint to complete the research work has limited the researcher to focus only on the case study of this project; on the assessment of the construction contract administration of the concrete pole factory expansion project.

3.4 Data Analysis Methods

The qualitative research is aimed to understand a given research problem or topic from the perspectives of the local population it involves. Two principal ways of conducting research are used for the analysis; namely; through the methods of literature review and interviewing “experts” in the subject; where, narrations method is used for the reformulation of stories presented by respondents taking into account context of each case and different experiences of each respondent with content analysis which is promising for rigorous exploration of many important but difficult-to-study issues of interest to organizational researches.

3.5 Ethical considerations

The researcher ensures the quality and integrity of this project work. The confidentiality and anonymity of the voluntary respondents is also guaranteed. This independent and impartial project work considered not to cause harm to respondents in what so ever way.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Overview of the concrete pole factory expansion projects

The specific locations that the expansion projects are taking place are the following:-

- Oromiya Regional State, Bale Zone, Goba district at LataGoba Kebele with plot of land of 30,000m².
- Oromiya Regional State, Gujji Zone, AdolaWoyu District, AdolaWoyu Town with plot of land of 30,000m².
- Southern Nation Nationality and Peoples Region, Gamo Gofa Zone, ArbaminchZuria Woreda, Secha Town, Chamo Kebele, with plot of land of 30,000m².

The sales contract followed successful completion of the previous awards of the private limited company at the existing factory in Hawassa and the ever increasing investment of the government in areas of rural electrification.

Each project has a pre-stressed concrete pole production factory block & raw material store. The factory is designed considering the specification of machinery & raw material store. The cement store size was quite enough to accommodate or have capacity of storing cement requirement of minimum of two months. The projects also have steel wire store, fuel tank & pump room, incinerator, changing room, laboratory, boiler and transformer houses, office buildings, cafeteria, staff residence, clinics, site work, two guard houses, a crusher plant to produce gravel which is a raw material required both for the construction & implementation phase of the project & a borehole since production of concrete pole requires substantial amount of water for concrete mix and cleaning of the site and curing of the pole. For all sites, total project cost for civil works, machinery supply & erection including general services of land acquisition, design & related costs is approximately 196 million birr.

Total contract duration at each location is 14 months and Kabew was expected to supply a total of 99,000 pre stressed concrete poles to EEPCO within fourteen months. In the sales contract, it is required to establish and own a concrete pole factory in each region. Therefore the first six months out of the total fourteen were given to establish and build the concrete pole factory with a capacity of producing 150 concrete poles per day at each site. The total project cost i.e. civil & structural steel work, machinery supply & installation cost including design, land acquisition and related costs at the three sites is 196 Million birr. 1826 days have

already passed before project commencement date. The time elapsed vs. project construction & machinery installation period is 997%.

Through informal alliance, Kabew was previously joined by Greatop Development limited of for the construction of the existing factory at Hawassa. Through external acquisition of technology strategy the local company got various services, which include general plan design of the concrete pole factories, product testing, designing, selecting, purchasing, inspecting, exploring & installation & testing of the production equipment, technology training, quality managing & equipment maintaining etc. The two companies later formed a joint venture and got involved formally in the current expansion projects.

Greatop Development Limited is a Chinese company engaged in the business of international trade & engineering projects. It has its headquarters in Beijing with a batch of senior engineers & rich experienced international trade professions as well as the supporting manufacturers which have advanced production facilities & large plant for equipment production. They provide their clients a full range of professional services which is including a general plan designing of the workshop, designing of the products & its production techniques, the selecting, purchasing, exporting, installation & commissioning of the production equipment as well as the technology managing, staff trains & equipment maintaining at site.

4.2 Actual Practices of the Construction Contract Administration of the Expansion Project

The researcher has made a semi structured interview with the project manager of Kabew and the well experienced senior project engineers, financial professionals and site engineers at their work premises. The interview took place at the head office in bole sub city, Addis Ababa. The interview took 8 hours in total. The total numbers of interview questions raised were about 19 which are focused on contract administration issues on the distressed construction project and the interviewees have responded as follows:

Since the project Owners engaged themselves to undertake the project, the project delivery system is called a force account delivery system. The Project Owners believe that there is a comparative advantage in cost, time and quality issues because they already have the manpower, equipment and skills required by the project.

On September 16/2014, Kabew entered a sub contract agreement with SIXP consulting architects & engineers, a local consulting firm for design services. The contract type used was

negotiated contract & lump sum price was given to design the project. Prior to the agreement, negotiation was made on the price breakdown of the total sum against major activities of the design work. The design service consists of architectural, structural, sanitary and electrical designs, and preparation of bill of quantities for pole factory constructed at the three different locations. The design took into account the data in pre-design stage, appropriate design standards and codes, municipal and other public body requirements and best methods of incorporating materials available in the project locations. According to the agreement the consultant prepared bill of quantity for the project excluding the steel structure of the production hall or factory building. The steel structure drawing was separately designed and submitted by Greatop development limited and later incorporated in the bill of quantity during the construction phase by the engineering teams at the construction department of Kabew construction Plc.

Together with the design consultant and Greatop development limited, design was completed prior to start of the construction & the contract administrator coordinated the internal & external communications of the projects design issues prior to construction.

Regarding the source of finance, of the total investment 64% was expected from bank loan and the remaining 36% to be financed from equity of the Company. Kabew acquired all the legal documents for the implementation of the project, including investment license from each locality & approached development of bank of Ethiopia in the year 2006 E.C to request for an investment loan but the process took almost 3 years and in the year 2009E.C development bank of Ethiopia formally rejected the investment loan request. Other efforts were also made to cover the required amount, which were not really successful.

To coup with the financial issue, the designs & specification of cement store, Office, changing room, toilet and shower rooms are changed from hollow concrete block house to corrugated iron sheet to significantly decrease the cost & duration of construction and priority was given to finish the factory block, electric house and boiler house. Plan to install a crusher plant in the compound is totally omitted and decision was made to purchase gravel locally.

As per the to-date progress report of project manager of the expansion project, in June 2019, based on the revised scope, current status of the physical structure of each project at kibremengist, Bale Goba & Arbaminch sites are 100%, 55% & 90% complete respectively.

The major role of the principal, in this case the Managing Director/Owner of the company in the project undertaking, is to express its project requirement, launch the project, supervise the performance, approve payments, arrange adequate funds, appoint authorized representatives, provide timely responses to the project managers submittals, request for information and proposed changes.

The Current practices of the construction contract administration in different phases of the project's delivery process consists of; management and supervision for performance of the work, record keeping on site & in office, document Control, payment management, schedule and cost control, progress reporting, management of variations and change orders, management of claims and disputes with sub-contractors; if any, Complying with all statutory rules, regulations and guidelines during execution of the works and ensure that all who are employed on the site abide by these conditions, Selecting and providing the means, methods, techniques, sequences, and procedures of construction, Scheduling and coordinating the work with subcontractors working on site & suppliers, ensuring that all work done in accordance with the contract documents.

The expansion projects are organized in a way they operate successfully based on experience of the existing plant of the Company. The organizational structure of the projects is annexed to the existing organizational structure of the Company. The top organ in the organizational structure is the Board of Directors. Next to the Board of Directors there is a General Manager. The general manager is assisted by seven department managers and one service unit. These are Construction Department, Production and Logistics Department, Human Administration Department, Finance and Budget control Department, Supplies Department, Transport Department and Technical& Maintenance Department and legal service unit.

The General Manager is responsible to lead, organize and coordinate the overall operation of the expansion projects. The Construction Department is responsible for the execution & control of the contracts, production and logistics Department is responsible mainly for follow up of the concrete pole factory projects and availing the required information regarding the successful completion of the construction project, Human administration department handles the personnel activity with regards to the projects, Finance and budget Control Department deals with handling of proper book of accounts and efficient utilization of the approved budget of the expansion projects, Supply Department and Transport Department are responsible for supplies management & fleet management respectively and technical

department is responsible for technical works & machinery installation activities. The Legal Service is also responsible for advisory services and court related issues of the expansion project.

Furthermore, the department managers are assisted by division heads that are responsible for the day to day operation in their respective area and report to the higher body.

The project manager believes that the Company has qualified and experienced management staff per the stipulated organizational structure. The same requirement was taken in to account to employ staff for the new posts. The qualification and experience of the existing management staffs involved in the expansion projects is presented as follows.

Table.4.1.Qualification & experience of existing management staff

No	Position	Sex	Profession	Qualification	Experience (years)	
					In the Comp.	Total
1	Managing Director	M	Civil Engineer	BSc	23	31
2	A/ General Manager	M	Civil Engineer	BSc	15	31
3	Head ,Production and Logistic Dept.	M	Management	MA	8	28
4	Head, Technical Dept.	M	Mechanical Engineer	MSc	4	25
5	Head , Administration Dept.	F	Business Management	BA	2	28
6	Head , Transport Dept.	M	Software Engineering	BSc	3	15
7	Head , Supply Dept.	F	Secretary	Diploma	23	23
8	Head, Cont. Admin Sec.	M	Construction Technology &Management	BSc	14	14
9	Concrete Pole & EM Plant Manager	M	Business Management	BA	4	26
10	Concrete Pole & EM Plant Manager	M	Business Management	BA	3	15
11	Project Manager	M	Civil Engineer	BSc	12	20
12	Project Manager	M	Construction Engineer	Diploma	16	27
13	Engineer II	M	Civil Engineer	BA	6	8
14	Engineer I	M	Construction Engineer	BA	3	5

In addition, the company employed junior site engineer, a Senior Construction Forman, a site administrator and store keeper for each site.

The head of the construction department at head office is responsible for administering the construction. He is also responsible for the overall construction of the projects, the project's completion on time, with in the allocated budget and expected quality. The company profile shows that the project manager has a work experience of more than 30 years & has been working on the project from the beginning and has sufficient knowledge and experience in his field of study.

The work progress & quality is inspected by the construction Forman & site engineer on each site and one senior project engineer who travel to the three sites periodically. The project engineer sends site visit report of every trip to head office. In addition to the daily phone conversations status updates, weekly reports are sent from the site engineer by email.

The team on site became aware of a need to change the scope, an error or defect of a technical nature in a drawing sent which was prepared for use in executing the works; they promptly notified the head office engineering staffs. Example given here is a change of the external walls of the curing pit from concrete wall to double HCB concrete filled wall experienced at Balegoba. Gravel which is a major input for the concrete work is brought from more than 80kms away from the site and the price of the raw material was much higher than the original estimate, this forced the team at head office to change the design to double HCB wall. A revised drawing is prepared at head office and is sent to the site engineer via email. And work is done accordingly on site.

At kibremengist, It was originally believed that a borehole or water well can be drilled and water can be easily obtained for the site but once the drilling started the team on site observed that even at a depth above 100 meters, the aquifer is dry & the quantity of water obtained cannot provide the required amount of water and the drilling was suspended. Then a subcontract agreement is made with another company who has the necessary equipment, personnel, and experience to perform a geological survey with advanced technology and it was later realized that the site does not have a ground water. Other options were discussed & later water line is obtained from the local water municipality.

Regarding the expansion projects, any formal communication made between kabew & external stakeholders are copied to the general manager and the concerned departments. The site engineers prepare & email weekly report to the construction department & the Construction Department reviews & compiles bi weekly status report to the General Manager. The report usually includes pictures taken from the sites. Drawing modifications, work orders, payment requests and other clarifications & requests are made in written form and are signed and filed for reference.

All internal & external communications of the company including requests, clarifications, payment request, issues relating to progress of work etc... from the stakeholders of the project & the staffs on site pass through the contract administrator. Daily phone calls and emails are exchanged between the staffs on site & in head office. Meetings among the Engineering staffs with the project manager are held regularly to update each other on status of work and issues related to the projects.

Regarding meetings, the project manager mentioned that meetings are properly documented and are mostly attended by the concerned parties. Actual and planned progress of tasks, challenges/problems & details of any events that came up during the execution of the expansion projects are brought to discussion on time. In progress meetings, Visual aids (such as charts & figures), pictures, and other elaborative materials & financial figures are not usually used while presenting the progress meeting. These meetings should grant the follow up of not just the quality but also the time and cost variables of the project.

While carrying out construction activities through direct labor, sharing of resources between the expansion and other projects of the company led to frequent alternation of decision on use of resources and the project manager had difficulty to get the required amount of resource at the right time. The project manager mentioned that he had to negotiate with functional managers to discuss on priorities to assign a resource which shows that he has no full authority over allocation of resources.

Kabew also uses subcontract letting to carry out activities of the expansion project. According to the project manager, this is because it is believed that subcontracting improves the productivity of construction facilities by virtue of specialization. Subcontractors are usually obtained by recommendations & low bid negotiated agreements are entered at

different stages of the project. Almost all subcontracts are price based contracts which are either lump sum or unit price based. And subcontractors are paid for the work measured in place on the basis of actual quantity executed, which are checked & approved by the forman & site engineer on each site.

A detailed BOQ is attached to the sub contract agreement and scope of the work is included. Contract Clauses which are built in-house are incorporated in the sub contract agreement to indicate the standard of performance, responsibilities with respect to performance of the services, reporting type & reporting period schedule, mobilization schedule and date of commencement of work, daily penalty equal to the subcontractor stand by rate, target completion time after signing of contract, bank guarantees, performance indemnity, payment schedule, working condition & repair of equipment's required to perform the services and all necessary ancillary materials throughout the term are all put for clarity & to avoid unnecessary claims and its associated problems to the project. Dispute, controversy or claim arising out of or related to the sub-contracting agreement or the breach, termination or validity thereof are settled by the Ethiopian law.

Meeting with major subcontracting parties are also documented and properly distributed, usually via email to the concerned parties who could also not attend the meeting for different reasons. An example here is given for Sigma Electric Plc, a major subcontractor which carried out erection of the superstructure & installation of the factory machineries. Pre Installation meetings are held with the subcontractor together with the technics department & construction department teams and once the work superstructure work commenced, regular progress meetings are held on site frequently. This is to aid the smooth flow of information and aid communication and team work. According to the subcontract agreements, a five percent retention is held from progressive payment of subcontractors so that When inconsistencies, inadequacies or other defects are found in the sub-contractors work, the works are rectified at the subcontractors cost. Clauses that aid the smooth running of work are included in the contract agreements. Practically, complaints are handled by negotiation between the Contractor and sub-contractor. There were minor claims which were solved by discussion and negotiation before turning to disputes. One issue raised under here is that the subcontractors usually complained about payments given on time. Their agreement gives no

guarantee as to when payment will be made and the employer of course pays when cash is available. This significantly affected the progress of work on site.

On the other hand, the company has also found a disadvantage of force account delivery system, which is failure to secure enough money to finance the project and activities like land acquisition, electric power connection, shipping & custom clearance of plant machineries, foreign currency shortage, bad weather conditions (long rainy season in Bale Goba), poor site selection (in Bale Goba), late in providing services from utilities (Water & Electricity) and national turmoil which was also active in the regions affected the timely commencement of the pole production factories.

Regarding the case whether the owner can entertain any cost overrun more than the total price prepared in the bill of quantity, the respondents mentioned that, since the market has been recently very volatile, the price of material and labor varies greatly with time and has been unpredictable. Therefore the company is suffering from absorbing additional overhead costs, cost of extension of performance bond and bank guarantee. Recently contract at balegoba has been revoked and fifty percent of the original contract with EEPKO at Arbaminch & Kibremengest has been cancelled. Such delaying factors & mitigation plans should have been properly planned in detail ahead of time.

Under such uncertainties, the researcher recommends the case company to apply the design-build arrangement which combines the services of the Consultant/Designer and the General Contractor. The design build approach builds team work, provides single point of responsibility, has open & transparent communication, eliminates adversarial conditions and has faster product deliver. The single source responsibility of the design-builder reduces administration claims and litigation conflicts between the design and construction teams as the division of responsibility between them is primarily the responsibility of the design-builder. All these lead to low cost for the Owner.

Finally, during the interview of the respondents, the researcher observed that since the project is own project it's noticed that there is a tendency to become overly dependent on the few key people who perform numerous jobs. Senior management and department heads usually have other, equally important things to do. Almost all staffs at head office are involved with other

equally important projects & operations. Under force account project delivery, it is also important that the company considers having a Project management office (PMO).

4.3 The Need for Project Management Office

A project management office is an organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques. The responsibilities of a PMO can range from providing project management support functions to the direct management of one or more projects (PMI, 2017). The task fields of a PMO include:-

- Compile the project portfolio by classifying, selecting and prioritizing projects based on the company strategy and available resources, preparing decision-making and facilitating decision-making for the portfolio board
- Plan resources at the portfolio-level, optimize the use of resources and solve resource conflicts
- Maintain current employee data, especially in terms of capacity, project allocations and skills
- Standardize methods and processes in project management
- Select, implement and train employees on applicable tools and software
- Increase transparency of current and planned projects through up-to-date, reliable project data
- Promote information flow and communication
- Create a knowledge base with Lessons Learned and Best Practices from past projects to avoid repeat errors
- Monitor project progress and control the dependencies that affect resources, budgets, and schedules (project portfolio tracking)
- Train and coach project leaders and stakeholders
- Administrative and operational support for project managers and project teams (e.g., conflict management, workshop moderation, etc.)

The company should consider establishing a project management office at a corporate, department or project level. Then select a PMO director who can be an internal employee or an external specialist, depending on his/her professional skills, as well as his/her experience, personality, soft skills, and career plan. Since there are few traditional training opportunities for PMO employees, it is especially important to staff this department with the right people. Best choice is to form a team that consists of less experienced employees who understand project management. These candidates should be highly resilient, fast learners with great development potential. Knowledge about the processes can be learned by doing.

During the interview, the project manager mentioned about rigidity of some of key department heads who prefer to follow the existing system. Once the new PMO is in place, there is usually a period of uncertainty because the PMO may not continuously provide directly visible successes and quick wins. It introduces new structures and competencies and demands a higher degree of bureaucracy. The problem is that many companies do not measure the performance of their PMO either qualitatively or quantitatively, and therefore cannot identify any potential for improvement. At this point, an independent expert opinion, a value analysis, or active stakeholder management can help the PMO director to work out the problems that lead to an “underestimation” of the PMO. Reasons for this underestimation can be: incorrect staffing, inadequate resources, missing a current operational plan, inadequate communication, excessive bureaucracy, and a lack of visibility of successes. The value of a PMO increases with increasing responsibility. As soon as the PMO transitions from purely administrative functions (reporting, controlling, and executing projects) to strategically controlling functions (portfolio and benefit management), it also becomes more valuable.

If the PMO has begun a phase in which it creates value, and this value is also communicated, then one can say it has been successfully anchored within the company.

PMOs themselves should prove their value by tracking appropriate metrics and always look for ways to improve. When PMOs start measuring success, they define the relevant metrics and reporting periods together with the stakeholders. It is also important to record the initial key performance indicators (KPIs) (if possible prior to the introduction of the PMO or shortly afterwards). This allows them to use comparative values later and follow the development since the start of the PMO. The most common KPIs for PMOs are summarized in the following table.

Table 4.2: Most common KPIs for PMOs

Goal	KPI
Improved Project Completion	Ratio of successfully completed projects to all projects in the portfolio (per period)
	Ratio of successful, strategically important projects to all strategically important projects in the portfolio (per period)
	Ratio of successfully completed, strategically important projects to all projects in the portfolio (per period)
Improved Predictions	Ratio of estimated project costs to actual costs
	Ratio of estimated project duration to actual duration
Improved Stakeholder Satisfaction	Average customer satisfaction compared to previous years
	Average project employee satisfaction compared to previous years
Faster Time-To-Market	Time elapsed between project conception and project start compared to previous years
	Time elapsed between project conception and project completion compared to previous years
	Percentage of projects that have the same progress over X reporting periods
Improved Resource Management	Number of training courses completed compared to previous years
	Relationship of internal project leaders/specialists to externally recruited project leaders/specialists
	Number of employees who are assigned to several projects at the same time
	Number of projects with resource conflicts compared with previous years
Improved Project Management	Time elapsed between the occurrence of deviations, risks, conflicts and/or corrective actions
	Proportion of active projects without conclusion of contract or placing of order
	Percentage of project status reports older than X days
	Relation of projects with complete documentation compared to projects without documentation
Optimized Finances	Analysis of the annual ROI of all projects coordinated by the PMO
	Percentage of projects under the agreed budget (compared to previous years)

The success of a PMO cannot only be measured quantitatively. Asking the project employees and project managers about the PMO and its impact provides information on the

current level of acceptance. Possible yes or no questions for such a qualitative measurement are: Is the PMO a time saver for you? Does the PMO make work easier for you? Are you aware of the portfolio's priorities? Does the PMO promote cross-project communication and transfer of information? Do you feel the PMO supports you in resolving resource conflicts? Are the predefined PM methods useful for you? Are the training courses offered helpful?

We should definitely give the new PMO the chance it deserves. Also, encourage our employees. If the department isn't providing enough value, we should try to get to the bottom of the problem – it could actually be due to perception.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

The project work discussed about the project contract administration practices of the concrete pole factory expansion project of kabew construction plc at Arbaminch, Balegoba & Kibremengist which are currently distressed projects. Starting from the beginning up to the end, it has discussed about many related issues. Though to be selective for the summary writing; theories and principles with definitions of contract administration, the essence of having; adequate human resources, proper understanding of contract documents, appropriate choice of delivery method for the project, giving appropriate roles & responsibilities with authority for project participants aids the team effort in the effective construction contract administration. Consideration for creating contracts, types of contract delivery methods & critical success factors in contract management were all theoretically discussed thoroughly.

The paper then clearly deliberated and presented the results obtained from the interview sessions. The researcher came to claim the following as key findings of the project work. Having skillful experts, documenting every project instructions in written form, Site management and supervision, Using a proper construction method, frequent coordination with any involved party, Proper and complete design on time, Frequent follow-up & progress meeting, major involvement of the principal or owner, understanding documents, acquiring & using an up-to-date technology, identified as how effective contract administration can be used to execute projects.

On the other hand, The findings can be summarized as the current practices of contract administration of the expansion projects and whether the chosen force account project delivery system have implications on time, cost, quality, & variation of work. The experts raised the key issues influencing the expansion project at the different phases of the project delivering process which is currently a distressed project. The researcher also found a disadvantage of force account delivery system of the project work of the expansion projects. which is failure to secure enough money to finance the project, responsibility without authority, frequent alternation of decision and absence of priorities, inappropriate application of delivery system and activities like land acquisition, electric power connection, shipping & custom clearance of plant machineries, foreign currency shortage, bad weather conditions, poor site selection, late in providing services from utilities (Water & Electricity) and national turmoil which was also active in the regions affected the timely completion of the projects.

The project owner is suffering from absorbing additional overhead costs, cost of extension of performance bond and bank guarantees.

Finally, from what have been said by the interview respondents, the effectiveness of the construction contract administration practices at kabew construction Plc is summarized in the way that; this expansion project is ineffective in meeting its project time because project participants do not have full authority for responsibilities given, the company does not have adequate number of human resource to carry out the project & the chosen delivery method is not implemented well. The quality assurance is known but the project suffered in cost overrun due to various issues.

5.2 Conclusions

The project work has come a long way in discussing project contract administration issues with an ultimate objective clearly stated in section 1.4 of the introduction part, as to assess the practices of construction contract administration practices of a private limited company in carrying out concrete pole expansion projects at Arbaminch, kibremengist & Bale Goba. In light of this, the study is meant for to examine the implementation of the construction contract administration in the concrete pole factory expansion project, appropriateness of the chosen delivery system, the human resource capacity of the concerned units of the project in the case company & roles, responsibilities and given authorities of project participants in administering the construction contract. To achieve these objectives, the study used literature review, and structured interview as a research instrument where narration was made. In this chapter, the major findings of the research which have been discussed before are summarized in accordance with the objectives of the research.

5.3 Recommendation

Based on the findings and results of interviews & discussions made with the stakeholders of the project under study, the following points should be given due consideration.

- In order to use force account delivery system, it must be ascertained that it is cheaper to execute the works in house as compared to outsourcing scheme.
- Some staffs working at head office & most of the staffs working on site are not aware of the commitment or agreement their company entered with the EEPCO. The schedules were prepared & distributed according to the original agreement but letting them know about the commitment and communications made with main stakeholders

is equally important because it could have motivated the project participants to be more accountable and could have greatly facilitated the team work and contract administration. Keeping the originals, concerned staffs should also easily access these documents at all reasonable times.

- Professionals and authorized persons who have the power to pass decision on delivery method should update themselves to the recent and effective project delivery methods (PDM) that have greater performance on international experience
- Guidelines that shows advantage, drawbacks, favorable conditions, challenges and characteristics of different delivery method should be prepared in order to ease selection by owner

- In order to minimize the unforeseen risks and its related cost explicit study should be performed. The project cost can be managed efficiently and the project owner is better prepared with unexpected events with outlining a plan ahead of time.
- Critical success factors are identified as limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization. They have a direct impact on an organization's project management & contract management processes as well as resulting outcomes and should be given proper attention.
- The company should improve the productivity, good control system for costing
- Guidelines on mitigating delays should be prepared in order to minimize delays in construction industry.
- A proper technical training schedule is required and recruiting the skilled and experienced workers will help in mitigating delays.

Finally, it's noticed that there is a tendency to become overly dependent on the few key people who perform numerous jobs. Senior management and department heads usually have other, equally important things to do. Almost all staffs at head office are involved with other equally important projects & operations. It is important that the company considers having a Project management office (PMO).

5.4 Implication for further study

The researcher wishes & proposes that a research of further depth with enough number of sample projects should be done. Also incorporate quantitative figures so that more can be done on the project under study & similar projects by focusing on its various types of PMBoK areas for future research.

References

- Adjei, K. O., Aigbavboa, C. O. and Thwala, W. D. (2017) “The Challenges of Cost Control Practice in the Construction Industry: A Literature Review”, International Conference on Applied Sciences and Technology (ICAST).Ghana: Kumasi Technical University
- Burke, R. and Barron, S. (2014). Project management leadership: building creative teams.UK: John Wiley & Sons, Ltd
- Dinku, A. and Kahssay, G. (2003) ‘Claims in international construction projects in Ethiopia and case studies on selected projects’. Journal of EEA, Vol 20 (2003)
- Gezahegn, G. (2011) Assessment of Conditions of Contract Problems in Ethiopian Construction Industry. Master’s thesis. Addis Ababa University.
- Goldfayl, G. (2004)Construction Contract Administration. Second Edition. Australia: University of New South Wales Press Ltd.
- Bekele, H. (2017) Construction contract Administration Practices of the new head quarter design-build (DB) project of commercial bank of Ethiopia. Master’s thesis. Addis Ababa University.
- Klee, L.(2018) International construction contract law. Second Edition.USA: John Wiley & Sons Ltd
- Phillips, C. (1999). Construction Contract Administration.USA: Society for Mining, Metallurgy, and Exploration, Inc.
- Pöyhönen, P., Sivunena, M. and Kajandera, J.K (2017) “Developing a project delivery system for construction project – a case study”, Creative Construction Conference. Primosten, Croatia, 19-22 June 2017, Finland: Elsevier Ltd.
- PPA (2006). User’s Guide for Standard Bidding Document for the procurement of works. Addis Ababa: Public Procurement Agency, MoFED,
- Project Management Institute, (2018). A Guide to the Project Management Body of Knowledge. USA: Project management institute.
- Rendon, R.G. (2010) “Critical success factors in government contract management”. Available from: <http://www.ippa.org/IPPC4/proceedings> [Accessed on May 2019]
- Selecting the method of construction: contract or force account (2016) FHWA [mp3].USA:USDOTFHWA

- Sivaprakasam, S. Dinesh, S. & Jayashree, J. (2017) "A Review on Causes of Delay in Construction Projects". International Journal for Scientific Research & Development, Vol. 5, Issue 02
- Shengeza, J.J. (2018) "Procedure on Effective Application of Force Account as a Method of Procurement for Renovation and Remodeling of Government Building Projects". Journal of Civil, Construction and Environmental Engineering, Vol. 2, No. 6, pp. 153-158.
- Thomas, H. and Ellis, R. (2007) Interpreting construction contracts: fundamental principles for contractors, project managers, and contract administrators. Virginia: American Society of Civil Engineers
- Uher, T.E. and Davenport, P. (2009). Fundamentals of building contract management. Australia: University of New South Wales Press Ltd
- Uyinmwun, M. & Ogbu, C. (2018) "Emerging issues in construction contract administration & their significance in the Nigerian construction Industry", Ethical issues in construction projects procurement and administration. Bishop Kelly pastoral center, 22-23 Nov. Benin: The Nigerian Institute of Quantity Surveyors
- Venkatesh, P.K. and Venkatesan, V. (2017) "Delays in construction projects: A review of causes, need & scope for further research". Malaysian Construction Research Journal; Vol. 23 | No.3
- Widmer, A. (2017) "What Is a PMO and Why Do I Need It?", Meisterplan, 22 June. Available at: <https://meisterplan.com/blog/how-pmo-fits-into-your-company/> (Accessed June 2019).
- World Bank (2019). Access to electricity (% of Population). Available from: <https://data.worldbank.org/indicator/eg.elc.accs.zs?end=2012&start=1990/> (accessed May 2019)

APPENDIX

Interview Questions

Good morning/ afternoon/ evening Sir/ Madam:

My name is Martha Teshome. I am a post graduate student of Addis Ababa University, School of Commerce; department of Project Management. Currently, I am conducting a research entitled “Assessment of Construction Contract Administration Practices of Concrete Pole Factory Expansion Projects of Kabew Construction Private limited company “as a partial fulfillment of senior essay required for MA degree.

Therefore, I would like to express my deepest gratitude for your cooperation in answering for the following interview questions. The very purpose of this research is to assess the practices of construction contract administration and its successfulness on the project undertaking; level of implementation and importance of project contract administration. This being said, it should be noted that, the research mainly depends on the accuracy of your answer. Lastly, I would like to assure you that, the data being collected from you will be presented anonymously and kept under strict confidentiality.

1. What roles do you play in the project undertaking?
2. Who is the contract administrator?
3. What is the source of funding (financial allocation) for this project?
4. Which deliverable of the project is completed so far as per your last progress report?
5. What is the level of education & experience of professionals of the project team?
6. Do you think the number of current employees of the project is sufficient to oversee the activities in the project?
7. What is the concrete pole factory expansion current practice of contract administration in different phases of the project delivery process?
8. When subcontracting works, what contract model is used?

9. When subcontracting works, what contract types are used?
10. How often complaints or claims occurred since the start of the project and how are these complaints being handled?
11. How is own work & subcontractor's work quality being checked?
12. How is quality assurance reviews being conducted? How often?
13. Are there any variations of work reported so far? How is these variations handled?
14. Do you maintain contract administration files documenting your actions under the contract?
15. Does the contract administrator direct the team on site without putting technical direction in writing?
16. How often does the contract administrator interact with the principal & the team on site (i.e. daily, weekly, monthly, or only when action is required under the contract)?
17. How does the project manager know that the team on site is adhering to his/her delegated duties?
18. How is the expansion project of the factory become effective in technology transfer through contract administration?
19. What were some of the problems or challenges that you faced while doing this project?
20. If there are other details about any of the above questions that you would like to discuss?

Thank You