



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**CONTRACT ADMINISTRATION PRACTICES OF ROAD
PROJECTS:
THE CASE OF ETHIOPIAN ROADS AUTHORITY**

**BY
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**JUNE, 2020
ADDIS ABABA, ETHIOPIA.**

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**A THISIS SUBMITTEDTO ST.MARY'S UNIVERSITY, SCHOOL OF
GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE
REQUIRMENTS FOR THE DEGREE OF MASTER OF PROJECT
MANAGEMENT (MA)**

**JUNE, 2020
ADDIS ABABA, ETHIOPIA.**

**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
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**CONTRACT ADMINISTRATION PRACTICES OF ROAD
PROJECTS: THE CASE OF ETHIOPIAN ROADS
AUTHORITY**

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Muluadam Alemu (PhD). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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ENDORSEMENT

This thesis has been submitted to St. Mary's university, school of graduate studies for examination with my approval as a university advisor.

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ACKNOWLEDGEMENT

Above all, I praise Almighty God who for giving me the health, strength and endurance until this time. In the preparation of this thesis many have contributed priceless data, idea, resource books as well as moral support. I am deeply grateful to all who have given me assistance in obtaining the information and data related to this work. Particular thanks also go to the experts and staff at Ethiopian Roads Authority for their willingness to provide me with all the necessary data so that the research work could be carried out.

I would also like to use this opportunity to convey my gratitude to my friends and family. Without their support and encouragement, I couldn't have this opportunity to complete my study. I also gratefully acknowledge the contributions of all those individuals who had contributed in one way or the other in the realization of this paper.

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List of acronyms

CA	Contract Administration
EOT	Extension of Time
ERA	Ethiopian Road Authority
ROW	Right of Way
RSDP	Road Sector Development Program
PQSM	Performance Quality and system management
ERAMS	Ethiopian Roads Authority System Management
SPSS	Statistical Package for Social Sciences
VO	Variation order

Abstract

Infrastructure projects, such as road constructions, are one of the most important projects in Ethiopia. Growth in this sector is critical for growth in national income as it is among the largest sectors that generates employment within the country as well as a key driver for economic development of Ethiopia. Ethiopia Roads authority is administrating hundreds of road projects; however the projects completed with poor delivery, particularly in terms of cost, time and quality. So the researcher expected that if the contracts had been administrated effectively the projects would have been successful with respect to cost time and quality.

Accordingly the researcher tries to assess the contract administration practice of ERA, evaluate its effectiveness based on the parameters developed during the intensive literature review and tries to assess and identify the challenges that impede the contract administration process of the authority. Primary data's are distributed and collected to 124 employees through questionnaires and interview was conducted with 22 employees of contract administration staffs and managements of ERA and secondary data are collected from manuals and reports of the authority. SPSS software was used for the analyses of data collected. The result of the study indicated the contract administration practice of ERA was not effective in the activities of following up of manuals guideline and procedures, skilled and experienced staff, risk identification and management, well organized filing system, quality assurance of a project and contract closing out procedure. In addition the major challenges in the contract administration pactice are Insufficient trainings in contract management process, Unwanted contract changes(cost, time and scope), Lack of Organized risk assessment at early stage of contract implementation, Poor project performance, Unethical practices, Problems in clearing right of way(Row), Using Traditional Filing system, High Turnover staff and absenteeism), Inappropriate scheduling of contract duration, Inconsistency in following up Manuals and Guidelines ,Not considering factors that could affect delivery of a project., Project Closeout procedure problem. Based on the findings the researcher recommended Intensive trainings on contract administration practices specially to new employees, to develop a mechanism of verification to ensure the manuals are being followed by all employees ,to tackle the causes that contribute to cost increase and delay of projects, Attention should be given to Right of Way issues since they are the main cause of or projects to lag behind the schedule, Resource mobilization of contractors should be monitored strictly, to develop a contract closeout checklist and o have a proper modernized documentation system

Key words: Contract, ERA, Contract administration, Effective contract administration,

CHAPTER ONE

INTRODUCTION

This chapter of the study is dedicated to give an insight about the general objective of the study or the problem leading to the study, to review some literatures about the problem and their deficiencies in addressing the problem at hand and asserting the significance and purpose of this particular study for Ethiopian Roads Authority and other interested parties.

1.1 Background of the study

Road, as one of the basic infrastructure plays a vital role on the development of a country's development and civilization by connecting rural areas to deliver products to the nearest market and to services and products from cities to country side. Building roads is a very costly and need highly educated man power and roads are expected to serve longer period of time and the organization, Ethiopian Roads Authority has been given the mandate for the restoration, expansion and maintenance of Ethiopia's Federal road network. Its goal is to improve transport operating efficiency and reduce road transport costs, provide access to rural areas and develop institutional capacity of the sector (ERA, 2012).

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 & Ogbu, 2018).

According to (ERA, 2019) Contract is defined as an agreement between two parties to undertake a certain works for the payment a sum amount of money .A contract legally binds the two parties to undertake the works on one hand and to pay for the works on the other hand. In the meantime FIDIC ,(1999) defines contract as an

agreement of conditions, a requirements of the client, tender, specifications and other further documents(if any) that are listed in the contract agreement.

The Ethiopian Civil code Article 2610 described a construction contract as a contract of work and labor whereby one a party, the contractor, undertakes to produce a given result under his responsibility and in consideration of a remuneration that the other party (the client) undertakes to pay him.

Moreover Article 2876 explained that contract whereby one of the parties undertakes to deliver to the other party a house, a flat or another building which does not yet exist, is a contract of work and labor relating to immovable and not a contract of sale. 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, as cited in Martha, 2019).

Contract Administration is the management of the Contract, which is a part of Project Management. It is a process of carrying out construction work in a planned manner on behalf of the appointee. Construction work includes detailed planning; feasibility study etc. The objective of Contract Administration is developing better relationship between owner and contractor by reducing conflicts/arbitration. (SHAIIVAL et al 2015).

Besides A successful contract administration is reliant on an effective communication of 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 (Uher & Davenport 2009).

As it is indicated in ERA, (2009) due to failure to administer contracts effectively, contracts resulted to lag behind schedules and variations in contract cost and claims.

Currently ERA is administrating more than 127 projects through the regional Directorate after the awarding of the construction of the works project to the Contractor and the Construction supervision Consultants. ERA normally have at least two contracts for each projects i.e. the Supervision Services Contracts and the Works Contract. There are also other contracts besides the supervision and works contracts that they wished to implement. Because of this they tend to be referred the administration of contracts rather than the administration of projects. (ERA, 2009)

So the study of this research is intended to look in to the contract administration practices of the authority, after the contracts are awarded to the contractor/consultant, which is in the implementation process. And also it will try to assess the challenges in the practices of the contract administration in client's perspective. And based on the findings of the gaps recommendations for improvement will be followed

1.2 Statement of the problem

Accordingly Contract administration is one of the most important jobs related to construction projects and involves numerous tasks occurring before and after contract execution and work order issuance. All work must be administered in accordance with the contract specifications, terms and conditions. It is the process of increasing the probability that the project will be constructed in substantial compliance with the contract documents. Local construction industry and local project performance still face several contractual problems such as, delays, litigation, and additional costs which are the consequences of disputes. Murtaja, (2007, as cited in Hirut, 2017)

According to California department of general service, (2004) weak contract administration can cause the project to violate terms of a contract, which can lead to penalties, fines and potential lawsuits, make projects caught up in daily routines and lose sight of contract renewals which makes projects operating under expired contracts and makes projects in having poor reporting relationship with the contractor and leads the two parties losing benefits of monitoring. Each move made

with a contracted entity should be dictated by the good contract management to avoid the high cost of the contract penalty clause.

Tadesse, Zakari, Zoubier, (2014, as cited in Zewudu, 2016 & Mengesha 2015) which argued that, regardless of its major role, the construction industry in Ethiopia, like in other developing countries, faces many challenges in its practice. Some of these challenges are project overruns, poor quality, inappropriate procurement systems, and a failure to cope with project requirements and the inability to adopt best practices. They further indicate that, the performance of construction projects against what was planned can be measured and evaluated using a large number of performance indicators that could be related to various dimensions (groups) such as time, cost, quality, client satisfaction, business performance and safety. Besides time, cost and quality are the three predominant performance evaluation dimensions and they are the three basic and most important performance indicators in construction projects. They also stated that the application of sound Project Management and Contract Administration practices provides construction project stakeholders with the means to meet their objectives.

Also the Ethiopian road authority (ERA) spent over 53.3 billion birr, nearly quarter of the country's total budget on various projects, following Ethiopian policy to put the road sector among the top of its development priorities, (Ethiopian Construction, 2016). Macro research Ethiopia, (2019) showed that the road constitutes as the second largest federal spending item succeeding to educational allocations. A high priority has been given to the road construction.

According to ERA, (2012) stated that in the recent past years, contracts fail to be administered effectively and cause the contracts to result in late delivery and to overpriced works .

The researcher assumed that there is gap in the effectiveness of the contract administration practice of the organization such as, in management of contract changes, claims, resource mobilization, human resource building, risk, ethical & professional behavior, following up the organization manuals and guidelines etc. Therefore, this study was carried out to further assess the existence of the assumed gap and challenges associated with the practice.

1.3 Research question

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

- What does the contract administration practices looks like in ERA?
- How effective is the contract administration practice in ERA?
- Are projects in ERA Completed with in
- What are the challenges in the contract administration practices?

1.4 Objective of the study

1.4.1 General objective of the study

The general objective of the study is to assess the contract administration practice of ERA.

1.4.2 Specific objectives of the study

- a) To assess the contract administration practice in the implementation phase of the project of the project
- b) To examine the effectiveness of the contract administration practice.
- c) To assess the challenges faced by the employer in the contract administration practice.

1.5 Significance of the study

The study will help in providing clear picture of current state of the contract administration practice. It is will also identify the challenges that hinder or slow the effectiveness of the contract administration practices of the organization. Therefore, the organization might be able to see the performance of the contract administration and learn lessons and build corrective measures for the weakness based on the recommendations. Finally, the study might have much importance for those who are interested to conduct further study on the related issues; it may be used as an indication.

1.6 Scope of the study

This study focuses on the assessment of contract administration practice in Ethiopian Roads Authority. The assessed challenges are from the employer's perspective. Due to the nature of the study the focus of the primary data source was on the staffs and management members who are engaged in the construction activity and have deep knowledge regarding the contract administration practice.

1.7 Limitation of the study

A major limitation of the study was the pandemic COVID 19, due to that collection of data from other stakeholders was a limitation so this study only focuses from the perspective of the employer. Similarly collecting questionnaires and conducting interviews was a big challenge in this study. Despite the aforementioned limitations, time was also another limitation of the study since a short time schedule has been provided for the completion of the project work.

1.8 Organization of the study

This study is divided into five main chapters. Chapter One is about the back ground of the study which explained the back ground information of the study, the statement of the problem which explained about the research gap and justifies the problem areas which needs further research, the research questions, the significance, the limitation and the organization of the study are other topics which are covered by this chapter. Chapter two is comprised a theoretical review of the existing literatures of contract administration. It is an evidence for the contract administration practice. The Third Chapter focuses on the research methodology including the population, methods of data collection and the research instruments used. Chapter Four is a detailed analysis of data collected and presentation of information with the help of statistical models. The final fifth chapter summary, conclusions, recommendations and suggestions are given for further research doings recommendations.

CHAPTER TWO REVIEW OF RELATED LITRATURE

2.1 Contract

A contract is an agreement between two parties imposing rights and obligations which may be enforced by law (Mary charman, 2007). A contract is an exchange of an act or promise between two or more individuals or business entities. It involves one party (or a group of parties) offering something of value to another party (or group) as payment for a service, item, action etc. (Ashley, 2018).

2.2 Conditions of contracts

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).

2.3 Construction contracts

Construction contracts are a set of written conditions including issues related to construction contracts i.e. progress payments, construction program, variations, etc. Many organizations have published their own set of standard general conditions of contract for various types of contract. Sometimes they are published with a view to earning profits from the sale of copies and licensing of their use. They are also published by an organization with a view to protecting the interests of its members by assigning risks to clients of members rather than to members, or by the principal with a view to assigning risks to contractors. General conditions of contract vary greatly in fairness, quality of drafting and matters covered (Uher & Davenport, 2009)

The Ethiopian Civil code Article 2610 described a construction contract as a contract of work and labor whereby one a party, the contractor, undertakes to produce a given result, under his responsibility, in consideration of a remuneration that the other party, the client, undertakes to pay him. Moreover Article 2876 explained that contract whereby one of the parties undertakes to deliver to the other party a house, a flat or another building which does not yet exist, is a contract of work and labor relating to immovable and not a contract of sale.

In the late 1950s, the International Federation of Consulting Engineers (FIDIC) published a form of standard conditions of contract for works of civil engineering construction. They were designed for use in international projects

2.4 The Element of a Contract

There are seven elements for essentially to the validity of a contract (Uher & 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). In the majority of commercial contracts, there is a clear and obvious intention by the parties to create a legal relationship. Indeed, the courts will generally presume this to be so unless the agreement contains a clear statement to

the contrary, for example, including a statement that “this agreement is not intended to be legally binding” where in such a case, the agreement will not be enforced by law. Similarly, the agreement will not be enforced if the parties demonstrate by their continued negotiation that they do not regard themselves as legally bounded (Williams, 1992:-.as cited in Hirut, 2017).

B. Offer and acceptance

An offer exists when one party brings something of value that they wish to exchange for another. Offers are the terms that make up the contract. After an offer is presented, it can be accepted or rejected. Acceptance simply means that the offer presented was accepted (Ashly, 2018).

C. Consideration

Consideration is something of value (it need only be a promise), which is given by each party to the other at the time of making the contract. In other words, there must be a benefit and detriment accruing to the party making the promise. Consideration is also referred to as the price paid for the promise (Uher & Davenport, 2009).

According to Ashley, (2018), Consideration is essentially the benefit both parties receive for performing the contract (i.e. a service for money). Oftentimes, consideration is money, but it can be a service, an object, or anything else of value. In fact, consideration can even be a right, interest, or benefit.

D. Capacity

According to Ashley (2018), not everyone is eligible to form a contract, and capacity means that a person has the legal ability to sign the contract. It can involve mental capacity, as in the ability to understand the contents of the document (i.e. a sound mind). This can include individuals with cognitive impairments, individuals who are incapacitated and more. This does not include individuals who fail to understand the document for no legitimate reason. For example, someone can't claim they did not have the capacity to sign a contract simply because they didn't understand a word used in the document. Capacity can also refer to someone's ineligibility for other reasons, such as a person's age, declaration of bankruptcy, or past or current incarceration.

E. Genuine consent

An underlying concept of a contract is that the parties have voluntarily consented to make a legally binding agreement (Uher & Davenport, 2009). Agreements must be free from misrepresentation, mistake, duress, and undue influence. Misrepresentation is a false statement of an existing or past fact which was made that misled the party to whom it was addressed and so induced that party to enter into a contract. Mistakes of fact may arise in contracts as to the identity of the other party, the existence of the subject matter at the date of the contract, or the quality of the subject matter. Duress constitutes forcing a party to enter a contract as a result of actual or threatened violence to his person but not to his goods i.e. physical pressure. Undue influence is similar to duress but the threats or influences here comprise any kind of improper pressure applied on a person to enter a contract. The word „undue“ stresses that the contract was not made voluntarily (Atkinson, 1992:- as cited in Hirut, 2017)

F. legality of the object

Legality refers to the subject matter of the contract and whether it is legal. This element may seem unnecessary; however, it simply prevents individuals from trying to form contracts involving unlawful promises or consideration (Ashley, 2018)

G. Certainty

Even though parties have apparently agreed and have acted as if there is a contract, there may be no contract because the alleged contract lacks sufficient certainty and completeness. For example, a contract to build an office building for \$1 million, without any agreement on the size, location or anything else to identify better what is to be built for \$1 million, would be void (Uher & Davenport 2009)

2.5 Construction contract types

According to McMullan, (2019), there are different contract types that may be suitable for a particular project and selection of types of contracts depend on many factors for example: simplicity of design; desire for design flexibility during construction; availability of suitable contractors/project managers, and balance sheets of such contractors; political considerations; budget constraints vs. performance of completed project.

a) Fixed price Contracts

The general process of this type of contract requires the Contractor to tender on, and then take the risk in relation to, the price of the works. The Contractor, irrespective of the actual cost of the works, will be entitled to be paid no more than and no less than the Contract Sum, as agreed between the parties prior to commencing the works. In fact, for a number of reasons which are discussed elsewhere in this and related topics, a fixed price contract is rarely performed for exactly the amount of the originally agreed Contract Sum. For example, if the Principal delays the Contractor in obtaining the site, the contract would usually provide for an increase in the Contract Sum. The critical characteristic, however, of a fixed price contract, is that the Contractor takes the risk as to the ultimate price, and that the parties agree to pay the Contract Sum (as adjusted pursuant to the provisions of the Contract) (McMullan, 2019).

B) Cost plus contracts

The critical characteristic of the cost plus contract is that there is no risk, as to cost, borne by the Contractor. The Contractor and the Principal agree, at the time entering into the Contract, that the Contractor will perform the works, and that the Principal will pay for those works, on the basis of the actual cost of the Works to the Contractor, plus an agreed fee, usually an agreed percentage of that sum (or some other agreed incentive over and above the actual cost of the works) (McMullan, 2019).

The nature of cost-plus contracting, therefore, is that the Contractor agrees to perform the works but that the risk as to the final cost of those works is borne by the Principal, not the Contractor (the reverse of the position under the fixed price contract) (McMullan, 2019).

C) Design and Construct Contracts

A design & construct contract requires the Contractor to tender on the works described in the design brief (prepared by the Principal), tender not only for the construction of the works described in that design brief but also for the completion of the detailed design, consistent with that design brief. There are a number of construction reasons which suggest that the design & construct method of

contracting has the potential to reduce the overall cost of construction to the Principal. The nature of this type of contract is such that the Principal is able to enjoy the advantages of design efficiencies which Contractors, through their contracting experience, may be able to incorporate into the design of the works, which may have the effect of reducing construction cost (this is discussed further below). The Principal is still required to adequately specify (in the design brief) the works to be completed for the Contract Sum. The degree to which that works is specified, however, is less than that which would occur under a construction only contract. The accuracy of the design brief (which, again, is discussed further below), is critical to the Principal being able to rely on the design & construct contract (McMullan, 2019).

D) Build Own Operate Transfer (BOOT) / PPP Project

The basic structure of a BOOT project is that the Contractor agrees with the Principal not only to build the project but to arrange finance for the project, and then, using that finance, to build the project, to own the project for a limited period, to operate the project throughout that period and then at the end of that period, to transfer the project to the Principal. Typically, this style of structure is employed on public infrastructure projects where, but for the intervention of private sector financing; the project might not proceed (McMullan, 2019).

E) Construction contract management

A construction management agreement is similar in most respects to a project management agreement except the services to be provided by the Construction Manager are restricted to construction activities only (rather than, for example, design activities, site acquisition, leasing activities). Accordingly, construction management agreements are similar in structure to project management agreements. The substantive functions to be performed by construction management include engaging trade contractors on behalf of the Principal and potentially, the provision of preliminaries for those trade contractors (McMullan, 2019).

F) Turnkey contracts

A turnkey contract is one in which the Principal and the Contractor agree on a fixed Contract Sum to be paid upon completion of the works to a particular standard and/or performance criteria. and in relation to which the Principal does not participate in any way in the actual performance of the works but, at the end of the works, is invited to inspect the works and, subject to the works being adequately constructed and performing to the requisite criteria. In a fixed price contract, by comparison, the Contract Sum is adjusted throughout the contract period, (for the reasons set out above). A true turnkey contract in practice is more akin to a purchase contract than to a construction contract (McMullan, 2019).

G) Managing Contractor Contract

The Managing Contractor might be characterized as a hybrid of a project management/cost-plus/fixed price contract. The attraction of the Managing Contractor type of contract is its flexibility and the skills which the Managing Contractor may be able to bring to the project, to assist the Principal (McMullan, 2019).

H) Warranted Maximum Price Contract

A Warranted Maximum Price Contract is in substance a cost-plus contract between the Principal and the Contractor, which, in turn is subject to an upper limit (the Warranted Maximum Price) above which, subject to certain conditions. The Contractor will bear the risk as to costs. Under a Warranted Maximum Price contract, the Contractor is to be paid on a cost-plus basis up to a certain limit. Over and above that limit, the Contractor is not entitled to any further payment. That limit, however, as in the case of the Contract Sum under a Fixed Price Contract, is subject to adjustment in certain circumstances (for example, where the Principal varies the works, or where the Principal causes delay and/or additional cost to the Contractor) ((McMullan, 2019).

2.6 FIDIC Contracts

The International Federation of Consulting Engineers (FIDIC, acronym for its French name *Fédération Internationale Des Ingénieurs-Conseils*) is an international

standards organization for the consulting engineering & construction best known for the FIDIC family of contract templates. It was founded in 1913 by France, Belgium and Switzerland, now with membership from over 60 countries. The first edition of the Conditions of Contract (International) for Works of Civil Engineering Construction was published in August 1957 having been prepared on behalf of FIDIC and the Fédération Internationale des Bâtiment et des Travaux Publics, FIBTP (the International Federation of Building and Public Works, now known as the International European Construction Federation, FIEC) (Bunni, 2005; Glover, 2007). Ethiopian roads authority prepares its contract administration manual assuming the contracts are based on FIDIC condition of contracts (ERA, 2019)

2.7 Challenges of the construction contracts

Provisions provided in the contract well drafted and written may not be a problem on paper. The problem arises when these provisions are set to apply directly which breed conflict of interest among contracting parties. One of the major problems encountered in many cases is the interpretation of construction contract provisions. The interpretation of contract clauses is the obvious cause of dispute between the contracting parties. The interpretation of contracts has its own rules. Art. 1732-1739 of the Civil Code provide interpretation rules. These rules include among other things: interpretation in accordance with good faith and context; positive interpretation; limit of interpretation and general terms (Gezahegn, 2011).

According to Horgan & Roulston (2005) when two parties have made a reference to the courts for a legal interpretation of a point in their contract, the courts resort to a number of rules by which their decision is determined. Some of the most important of these rules include the following:

- Words are given their ordinary, every-day meaning and not esoteric or abstruse one.
- Odd phrases by traditional usage can be supported.
- Obvious errors or absurdities in a document must be corrected before a judgment is made.
- A special clause, written by the parties, takes preference over a ‘standard’ model clause with which it is not consistent; it is at least ‘thought out’.
- If the meaning of a word is doubtful, it may be assumed to belong to the same class as an associated word in the phrase.

2.8 Parties to a contract

The Employer

According to Uher & Davenport (2009), the main responsibility of the employer is making the site available to the contractor on or before the date for possession, which helps the contractor to start work and carry out the work in accordance with the requirements of the contract, paying the contractors as per the contract the accuracy of all information given by the principal concerning the site, including surveys of the site, services and land titles, and physical site conditions. After taking possession of the works at the date of practical completion, the principal must also allow the contractor reasonable access to the site for making good defects. The employer must ensure that there is a consultant at all times and that the consultant acts honestly and fairly and within the prescribed times or a reasonable time. The employer has an obligation to indemnify the contractor in respect of: Damage that is the unavoidable result of the construction of the works in accordance with the contract and Claims in respect of the right of the principal to construct the work under the contract on the site.

The role of the employer is to identify the projects and sets in motion the requisite studies, investigations and designs, and arranges the finance. When the details of the project have been finalized, the employer engages a contractor to execute the works, ensures the land is available for the works to be constructed, and makes payments to the contractor at regular intervals or on achieving specified milestones, depending on how the contract sets out payment is to be made (ERA, 2019).

The contractor

The contractor is responsible execution and completion the works in accordance to the contract documents and in accordance with any directions of the consultant, and must bring the works to practical completion by the date for practical completion. The contractor must bring security in the form stated in the contract. Neither party to the contract can, without the written approval of the other, assign the contract. The contractor is not prohibited from subcontracting the work but is liable for the acts, defaults and neglects of any subcontractor (Uher & Davenport (2009)

The role of the Contractor is to execute and complete the construction Works, for which he has submitted his Tender, within the time specified in the Contract and to the quality specified. In addition, he has an obligation to remedy any defects which appear during the Defects Notification Period (ERA, 2019).

The Consultant

Consultants are agents who are assigned to administer the work. The powers and functions of the consultants will depend on the agreement between him and the employer. The consultant must be careful not to breach that agreement and not to exceed the powers delegated to him by the employer (Uher & Davenport 2009).

According to (ERA, 2019), the consultant is the one who may have designed the works and who supervises work in the role of the engineer. FIDIC IV defines consultant as the person appointed by the Employer to act as Engineer for the purposes of the Contract.

The role of the construction supervision consultant is to act as the Engineer in supervision of, and administering a construction contract, within the limits set out in the contract agreement (ERA, 2019).

2.9 Contract administration

According to University of Texas, (2017), Contract Administration is referred as the processes that occur after a contract is signed and it includes seven (7) general processes: planning, monitoring performance, change management, payment approval, dispute resolution, termination, contract close-out. The primary tasks of contract administration include: Verifying contractor performance for purposes of payment; Identifying any material breaches of the contract by assessing the difference between contractor's actual performance and contract requirements; determining if corrective action is necessary and taking action, if required; and developing a completion plan for contractor exit requirements, including acceptance of the goods/services, final payment, and contract close-out.

2.10 General conditions of a contract

1) Contract documents

According to Uher and Davenport (2009), Contract documents like drawings, specifications and bill of quantities are the link between the designer and the contractor. On signing the contract, the contractor will be issued with multiple sets of documents i.e. the drawings, specification, bill of quantities, if any, and other written information required by the contract to be supplied to the contractor. All documents should be checked by the contractor for any discrepancies, errors or omissions and any that are found should be reported to the superintendent in writing. Before signing every document should be checked for errors and omissions.

2) Contract commencement and contract time requirement

The Contract has rigorous timescales, which if not met, can lead to serious contractual problems including financial and time penalties. This can be to the detriment of both the Employer and the Contractor (ERA, 2019).

3) Bill of Quantities

Bills of Quantities must include briefly described list of items of work. The Bills also provide a measure of the extent of work and this allows the work to be priced. The measure may be a single item or number, dimension (linear meter, square meter, and cubic meter), time (hrs, weeks) or weight (Atkinson (000)

4) Risk allocation

According to Burke, (2003), due to their unique nature of construction projects, they are full of risks which may exert impacts, to some extent, upon the cost, time and quality. To be successful projects have to have, a sound risk management system that usually comprises identification, analysis and response so that when the risks do eventuate they can be overcome. So, based on this the main tasks of all the project participants, including employers, contractors, professional advisors and subcontractors, is to identify the discrete sources of risk, develop a risk management strategy as part of their risk management system (Flanagan & Norman, 1993) and also cultivate the capability of carrying out such.

5) Meeting

Meetings are an essential form of communication and project management. There are three types of meeting, Initial Hand over Meeting from Planning and Procurement, Initial Project Management Meeting with The Engineer and Site Progress Meetings (ERA, 2019).

6) Site meeting

The main purpose of site meetings is to discuss past performance, identify the main problem areas and reasons for problems and agree on a new short-range schedule and co-ordinate the activities of all the parties including subcontractors (Uher & Davenport 2009)

7) Payment

Payments are made via a certification process which is explicitly defined through the Contract. Certificates are a critical issue. The Contractor will only be paid after having obtained a Payment Certificate (ERA, 2019).

8) Price adjustment

A research conducted in 2009 by Texas Transport Institute showed construction cost inflation is affecting many state highway agencies in USA. Some of this increase can be attributed to factors such as soaring cost of energy; reports of large variations in cost of bid items among different districts indicate that the problem is more complex. Indeed, there are many other factors affecting the recent increase in construction cost including design requirements, work restrictions, bidding procedures, and competition.

9) Claim procedures

Construction claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment, or interpretation of contract terms, payment of money, extension of time, or other relief with respect to the terms of the contract. The causes of claims in construction projects are many and varied. Depending on the particularities of the site and geographic location they may have differing causes and impacts. In a nutshell claim components include entitlement, damages and relief.

The rejection of whole or part of the claim by one of the contracting parties or initiating a counter claim against the claim, triggers dispute (Gezahgn, 2011).

In order to avoid ambiguity in the handling of claims, the FIDIC, (1999) sets out in clause 53.1 detailed procedures for claims. These include:

- The contractor gives his intention to claim within 28 days after the event give rise to the claim has first arisen,
- The contractor keeps contemporary records on the claim issue,
- The engineer examines such contemporary records,
- The contractor submits detailed particulars of the amount claimed and the grounds upon which the claim is based,
- The engineer to make determination based on the available contemporary record

10) Dispute resolution

Dispute resolution mechanisms are not new in the Ethiopian construction industry whether it is local or international construction contract (Abdisa, 2003; Girmay, 2003; Abera, 2005). FIDIC, (1999) gives all steps throughout the way from Engineer's decision or judgment then amicable solution and finally arbitration. However, the condition of contract of MoWUD, (1994) does not give chance for involvement of neutral body either in amicable or judgmental ADR mechanism. The destiny of a contractor is at the mercy of the Engineer and the Minister or his representative. These are in one way or another partisan to the employer, the public authority. Furthermore, at certain projects, such as regional projects, it is impossible to differentiate the public authority who is the client, the consultant and at the same time who acts as third party, the judgmental role (Gezahagn 2011).

11) Social, health and safety management

Ethiopia has officially and formally embraced environmental protection and consideration of environmental and social impacts of projects since 1995 when the Constitution of the Federal Democratic Republic of Ethiopia (FDRE) was promulgated (ERA, 2019).

12) Termination

Termination is legally an act to bring an existing contractual relationship to an end between contracting parties. It can be resulted from breach of contract, prolonged suspension, and remedial right for breach of contract by another contracting party Gezhagen, (2011).

Termination can be viewed from different dimensions such as: notice, ground, from party's right and its effects perspectives. Termination may take place with or without notice. Mostly conditions of contract provide for serving a notice of termination before taking an act of termination. Termination without notice shall be governed by applicable law as provided in Art. 1775 of the Civil Code

13) Project conclusion

All projects have specified periods for completion and, as the project period draws to an end there are a number of items to be considered and tasks which need to be undertaken to properly concluded the project (ERA, 2019).

2.11 Ethiopian Roads Authority Management System (ERAMS)

ERA has a system called ERAMS (Ethiopian roads Authority Management system), which is a tool mounted on a computer server in ERA Data Centre and accessed through either the Intranet or Internet over a secure website. The main objectives of the system is to assist in management of project Contracts from junior Project Engineers administrating contracts through executive chain reporting to the Director General of the authority (ERA, 2018).

2.11.1 Function of ERAMS

The main function of the system is to access reliable information of the projects to the contract administrator and managements. It is a key to reporting performance of contracts, contractors and consultants from the detail design stage through to completion of the works. The system has four main function and discussed below

- It provide management information from a single source enabling better management responsibility and accountability giving better assurance in budget allocation by validating estimates through the Estimate Validation System (EVS) (ERA, 2018).

- More efficient and better scrutiny of Works and Maintenance Contract Bids by analyzing bids through the Tender Analysis System (TAS) which allows delegated individuals the ability to analyze bidder's rates comparing them to the Engineer's Estimate and anyone of the other bidders bid which will assist in identifying inconsistent rates which may highlight misinterpretation or error in the Bill of Quantities that can be addressed before contracts are signed, identifying potential over or exceptional under-pricing and Providing historical rates for validation of estimates through Estimate validation system (ERA, 2018).
- Monitoring progress of construction and maintenance works through the Works Monitoring System (WMS) allowing Regular monitoring of physical and financial progress, A focus on end costs, and anticipated completion dates with the reasons for overspend and delays that can be addressed on future contracts, Analysis of common features leading to increase costs and delayed delivery (ERA, 2018).
- Improving performance of Contractors and Consultants through the Performance Appraisal System (PAS); provides a simple input for Performance Monitoring identifying the need for Consultants, Contractors and ERA to improve their performance during contracts and Provides a simple input for Performance Evaluation to grade overall performance of Contractors and Consultants giving ERA the opportunity to improve its selection system (ERA, 2018).

2.12 Tools and Techniques for Contract Administration

Patel, Ashok and marvadi, (2015) indicated that Project Management Discipline, Contract analysis and planning, Kick-off Meeting or Pre-performance, Performance Measuring and Reporting, Payment Process, Contract Change Management Process, Dispute Resolution Process and Contract Closeout Process are tools and techniques for contract administration

a) Project Management Discipline

As stated in Patel et al. (2015), all work to be performed should be appropriately led, planned, scheduled, coordinated, communicated, tracked, evaluated, reported, and corrected, as necessary, using the basic guidelines of the Project Management Institute (PMI) Project Management Body of Knowledge (PMBOK).

b) Contract Analysis and Planning

Before contract award, each party should develop a contract administration plan and assign the responsibility of administering the contract to a contract manager. A project manager could do double duty as contract manager. However, in most large companies, contract administration is a specialized function, usually performed by someone in the contracting department, because doing the job requires special knowledge and training. Contract administration is an element of both contract management and project management (Patel et al. 2015).

c) Kick-off Meeting or Pre-performance conference

Before performance begins, the government and industry should meet (via teleconference, videoconference, Web meeting, or face-to-face meeting) to discuss their joint administration of the contract. The meeting should be formal—an agenda should be distributed in advance, and minutes should be taken and distributed. Each party should appoint a person who will be its organization's official voice during contract performance. At the meeting, the parties should review the contract terms and conditions and discuss each other's roles. The parties also should establish protocols for written and oral communication and progress measurement and reporting, and discuss procedures for managing changes and resolving differences. Government and contractor managers with performance responsibilities should attend the pre-performance conference or at least send a representative important subcontractor should also be represented (Patel et al. 2015).

Performance Measuring and Reporting

During contract performance, the project manager, contract manager, and responsible business managers all must observe performance, collect information, and measure actual contract progress. These activities are essential to effective control. The resources devoted to these tasks and the techniques used to perform them will depend on the nature of the contract work, the size and complexity of the contract, and the resources available (Patel et al. 2015).

d) Payment Process

Every contract must establish a clear invoicing and payment process. The government and contractor must agree to whom invoices should be sent and what

information is required. Contractors must submit proper invoices in a timely manner, and the government is then required to pay all invoices promptly (Patel et al. 2015).

e) Contract Change Management Process

As a rule, any party that can make a contract can agree to change it. Changes are usually inevitable in contracts for complex undertakings, such as system design and integration. No one has perfect foresight—requirements and circumstances change in unexpected ways, and contract terms and conditions must often be changed as a result (Patel et al. 2015).

f) Dispute Resolution Process

No one should be surprised when, from time to time, contracting parties find themselves in disagreement about the correct interpretation of contract terms and conditions. Such disagreements typically are minor and are resolved without too much difficulty. Occasionally, however, the parties find themselves entangled in a seemingly intractable controversy. Try as they might, they cannot resolve their difference. If the dispute goes unresolved for too long, one or both the parties may threaten, or even initiate, litigation. Litigation is time consuming, costly, and risky. You can never be entirely sure of its result. Rarely is the outcome a truly satisfactory resolution of a dispute, and it sours the business relationships. For these reasons, litigation should be avoided. One goal of business managers and contract managers should be to resolve disputes without litigation whenever possible. For effective dispute resolution, one must recognize that contract documents are not perfect, Keep larger objectives in mind, Focus on the facts, depersonalize the issues, and be willing to make reasonable compromises. When disputes become intractable, seeking the opinion of an impartial third party can sometimes help. When this approach is formal, and the decision is binding on the parties, it is called arbitration. Many government agencies now include a clause in their contracts that makes arbitration the mandatory means of resolving disputes (Patel et al. 2015).

g) Contract Closeout Process

Contract closeout refers to verification that all administrative matters are concluded on a contract that is otherwise physically complete. In other words, the contractor

has delivered the required supplies or performed the required services, and the government has inspected and accepted the supplies or services (Patel et al. 2015).

2.13 Construction projects cost and schedule overruns

Mukuka, Aigbavboa, and Thwala, (2014), directed that cost and schedule overruns can occur for a wide variety of reasons on various types of projects which has led to the debate on how to minimize these construction projects cost and schedule overruns. However, in order to find measures of minimizing these overruns, the very first and most important step is to identify and understand the factors responsible for the overruns.

2.13.1 Construction projects Cost overruns

Cost overruns are very common in the construction industry. Hardly few projects get completed within original costs. Cost overruns are the change in contract amount divided by the original contract award amount. Cost overrun is also sometimes called cost escalation, cost increase or budget overrun. cost is among the major considerations throughout the project management life cycle and can be regarded as one of the most important parameters of a project and the driving force of project success. Despite the availability of various control techniques and project control software many construction projects still do not achieve their cost objectives. Hence, despite its proven importance it is not uncommon to see a construction project failing to achieve its objectives within the specified cost. Construction cost overruns mean negative publicity for the design team and loss of client confidence. The repercussions for contractors are similar as they see their profit margins shrink (Mukuka, et al 2014).

2.13.2 Construction projects schedule overruns

Projects or construction works that are not delivered on time to the client are referred to as projects that have undergone schedule overruns. Hence, schedule overruns are defined as an act or event that extends the time to complete or perform an act under the contract. It is basically a project slipping over its planned schedule and is considered as common problem in construction projects worldwide. to the owner, schedule overruns means loss of revenue through lack of production facilities and rent-able space or a dependence on present facilities. In some cases, to the

contractor, schedule overruns means higher overhead costs because of longer working periods, higher material costs through inflation, and due to labour cost increases (Mukuka, et al (2014).

2.14 Effective contract administration

Contract management involves actively managing the relationship between the organization and the contractor over the term of the contract. It focuses on addressing the risks and issues that arise, accommodating appropriate change where necessary and actively engaging the contractor to achieve the agreed outcome. Good contract management helps to avoid additional costs, delays and difficulties for contractors thus ensuring that both parties meet or exceed their obligations and that value for money is obtained for the organization (Hirut, 2017). Effective contract administration of contracts is vital for the works under the contracts forms of foundations of all works contracts, failure. Failure to do so will result in the late delivery of unsuitable and overpriced works, as has been the experience of ERA in the recent past (ERA, 2006).

A successful contract administration is reliant on an effective communication of 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 (Uher & Davenport 2009). Administration and management requires the application of experience and skills to the day to day problems which arise i.e. there is no "magic formula" or even procedure which will achieve the required results (ERA, 2006).

2.15 Factors affecting in construction contract administration

Kanchana, Niranjana and Arun Karthick, (2018) stated that, the Construction industry is a most complicated industry which is constantly facing uncertainties. The salient features of any contract including delivery schedule, quality specifications, regulations and standards are to be monitored by a good contract management team. It can be influenced in many ways. Project activities related to different project deliverables, risk management. Contract team competence can influence contract administration directly. There are also some other factors that influence a contract

administration indirectly these could be contract management plan, contract specifications and other variables. Almost all organization follows their own contract administration procedure, but still there are gaps in achieving obligations at a given time and acceptable quality .Even though contract administration manuals and procedures are existing there are lacks of proper contract administration. Any contract arrangement cannot guarantee a problem free project execution; instead it is the quality of people, management system of the organization and contractors who are the real and best guarantors of success.

According to Kanchana et al. (2018) there are five determinants of effective contract administration

- allocating of resources
- clear reporting lines
- defining of roles and responsibilities
- ensuring timely payments
- Risk management.

2.14 Components of Effective Contract administration

Employers can avoid risks which are related to the contract through, developing an effective contract administration practice. The components of an effective contract administration practice are , writing polies and procedures, on site monitoring, dispute resolution procedures, regular programmatic reports from contractor, Payments Linked to Satisfactory Performance, Organized Contract Files, Contingency Plans, Training in Contract Administration, Communicating Clear Expectations to contractors , Closeout Procedures, Post-Contract Review (Russel ,2003).

2.14.1 Written Policies and Procedures

Written policies and procedures serve as a guide to agencies and their personnel in ensuring a consistent, high-quality contract monitoring process (Russel, 2003).

2.14.2 On-Site Monitoring

On-site inspections by the employer are necessary to check the status of the project to ensure all terms of the contract are being fulfilled. On-site monitoring visits are

most effective when based on a specific methodology or a checklist of review tasks. On-site monitoring visits may not be necessary for all contracts (Russel, 2003).

2.14.3 Dispute Resolution Procedures

The Employers should notify the problems and has to set a timetable for resolution to the contractor in written form. If problems do not get resolved, the employer should notify the dispute resolution committee or the arbitration committee to compel the contractor to adequately comply with contract terms (i.e., financial consequences, contract cancellation) (Russel, 2003).

2.14.4 Regular Programmatic Reports from contractor

The contractor should submit programmatic reports on a scheduled basis which can be used for measuring performance. Programmatic reports should require information related to the performance measures (outputs and outcomes) in the contract, as well as any other deliverables (Russel, 2003).

2.14.5 Payments Linked to Satisfactory Performance

This is concerned about submitting the required programmatic reports by the contractors before requesting a payment. The Programmatic reports should be directly related to the terms of the contract (Russel, 2003).

2.14.6 Organized Contract Files

Contract files should be organized so that someone could reconstruct and understand the history of the contract in the absence of the contract administrator. Contract files should hold all the information necessary to know what was expected and received under the contract (Russel, 2003).

2.14.7 Contingency Plans

The effect of not having contingency plan by the employer can be visible when the contractors default on their obligations and may pay additional costs for taking back services. The following can be taken as an option for a default contingency plan: contracting with the next lowest bidder from the original solicitation; using another current vendor; delivering the service in-house; and contracting with another government entity (Russel, 2003).

2.14.8 Training in Contract Administration

Giving Training on contract administration increases the likelihood that individuals will monitor contracts reliably by giving them the appropriate background knowledge related to contracts (Russel, 2003).

2.14.9 Communicating Clear Expectations to contractors

This is about communicating the contractors regarding what is expected from him before and after the execution of the work. By clearly stating contract requirements and performance goals, the employer reduces the potential for poor performance (Russel, 2003).

2.14.10 Closeout Procedures

At the completion of the project, formal written closeout procedures are required in order to check important elements are not overlooked. The use of a checklist of closeout procedures helps to assure that all actions have been completed (Russel, 2003).

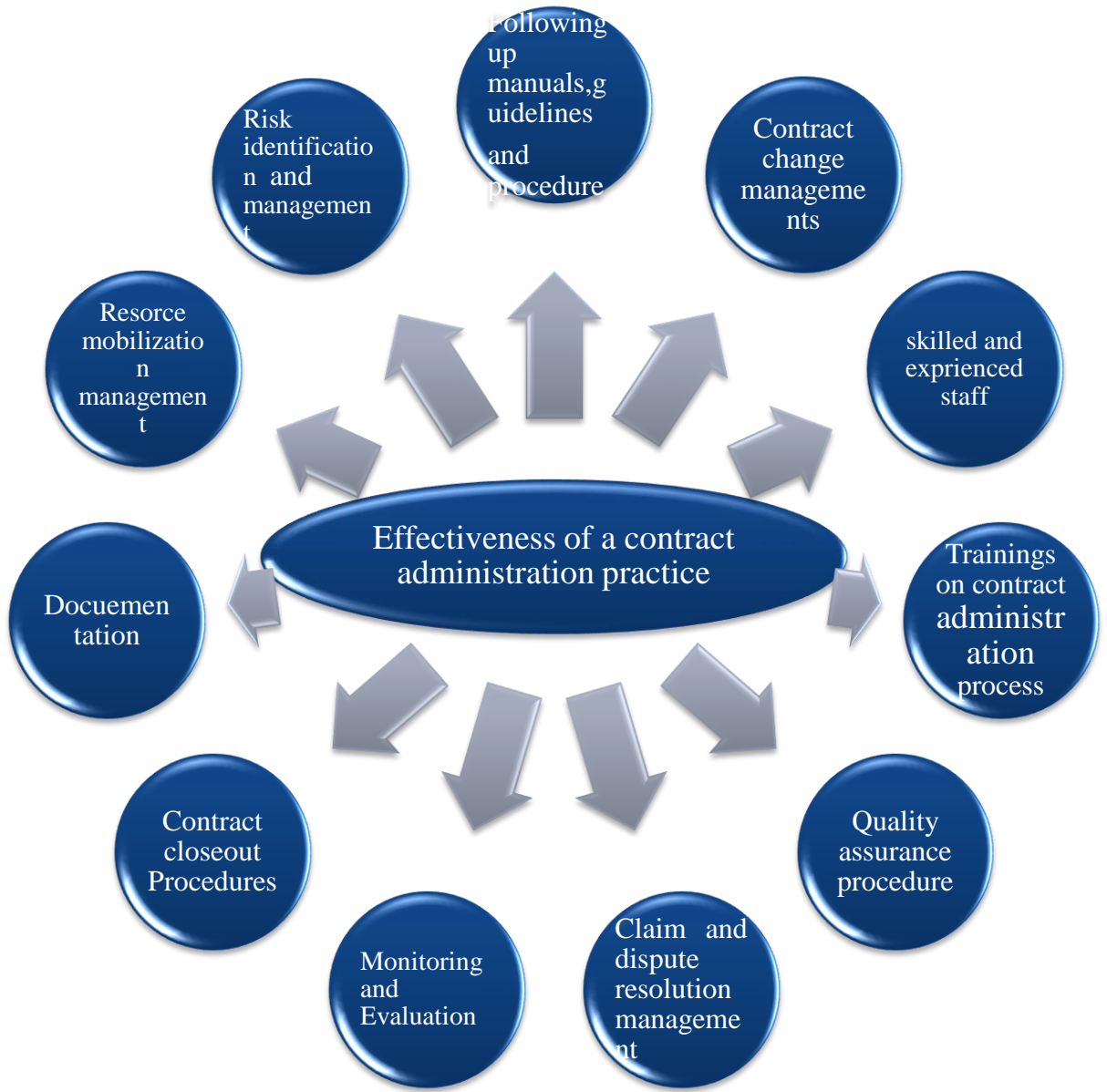
2.14.11 Post-Contract Review

When contract periods completed, employers should evaluate the contractor's performance and their own method of monitoring (Russel, 2003).

Effectiveness of contract management should make sure Recruit of staff with relevant skills, provide training to address skill gap, Have monitoring plans or checklists in place, ensure all staff understood their responsibilities in relation to performance management, establish and maintain a sound relationship with the contractor, hold regular meeting with the contractor to discuss progress and any problem, Identify any problem at early stage, Make payments only for satisfactory performance, Review the need to end the contract for any breaches of conditions or nonperformance and Seek advice on when a contract variation is necessary. (Kanchana et al (2018)

2.15 Conceptual frame work for effectiveness of a contract administration

Based on the reviewed literatures, the researcher has developed a conceptual frame work for this study.



Figures 2.1 conceptual frame work of an effective contract administration

CHAPTER THREE

RESEARCH DEIGN AND METHEDOLOGY

3.1 Research Design

In order to achieve the objective of this paper, using of appropriate methodology that helps to approach the research scientifically is the priority attention given by the researcher. Therefore, this chapter includes research design, population and sampling technique, instrument for data collection, procedure of data collection and method of data analysis.

3.2 Research Design

According to Geoffrey et al, 2005 descriptive research describes phenomena as they exist and used to identify and obtain information on the characteristics of a particular problem or issues. Based on the above definition descriptive type of research design is best to achieve the aim of this research since the study focuses on assessing the contract administration practice of road projects in Ethiopian Roads Authority

3.3 Population and sampling Techniques

3.3.1 Population of the study

The populations for this study are Ethiopian Roads Authority head office staffs who have direct relation with the contract administration of projects. About 117 questionnaires were prepared and distributed to the ERA at Addis Ababa, Mexico area West, East, North, South, Central PQSM (Performance quality and system management) Directorates, to assess the contract administration practice and problems with the perspective on the employers. Out of the 124 distributed questionnaires 117 were collected and used for analysis

3.3.2 Sample size

Sample size is one element of research design and that investigates need to consider as they plan their study. Reasons to calculate the required sample size include achieving both a clinically and statistically significant result and ensuring research resources are used efficiently and ethically (Mekonin, 2019).

For this study respondents were selected from performance quality system management directorate and six contract administration directorate (East, West, South, North, Central and Expressway). The sample under this research comprises 117 Engineers and managements who have a direct relation with the contract administration practices

3.3.3 Sampling Techniques

The study uses purposive sampling techniques because, the respondents were selected based on relevance criterion. Engineers that are involved in contract administration are specifically selected for both the survey and interviews

3.4 Types of Data and Source

The researcher has used both primary and secondary data collection instruments for this study. Ethiopian Roads Authority head office staffs are the major source for the primary data where questionnaire was distributed and semi structured interviews were conducted with the specific construction administration staffs. The secondary data are obtained from different articles, report, academic journal, manuals and guidelines of ERA and publications on contract administration practice, performance reports of the roads from ERAMS (Ethiopian Roads Authority Management system)

3.5 Instrument and Procedure of Data collection

Questionnaires were distributed to respondents with brief orientation on how respondents use their perceptions and thoughts to answer questions. The survey pack included a copy of the cover letter with brief introduction on questions.

Questionnaires

The structured questionnaires used are close ended and open ended. The open ended questionnaires are developed to assess the contract administration practices of the organization. The close ended questionnaires are constructed based on the five – point likert scale model to assess the effectiveness of Contract Administration practice. Questionnaires are developed after reviewing different books, articles, report, academic journal, manuals and Guidelines of ERA and publications on contract administration practices.

Interview

Interview is “a conversation, whose purpose is to gather descriptions of the life-world of the interviewee” with respect to interpretation of the meanings of the ‘described phenomena’. It adds that an extendable conversation between partners that aim at having an ‘in-depth information’ about a certain topic or subject, and through which a phenomenon could be interpreted in terms of the meanings interviewees bring to it (Kvale 1996). The researcher has used semi structured interviews for this study, and according to Gubrium & Holstein (2002) unlike structured interviews, semi structured interviews are open to situations through which a greater flexibility and freedom is offered to interviewers and interviewees in terms of planning ,implementing and organizing the interview content and questions.

3.6 Method of Data Analysis

To best meet the objective of the study Summary of statistics was organized both in the form of qualitative and quantitative measures by using frequencies and percentage. The questioner is designed in a structured way still containing an open ended questions and Likert scale indicating measurement used on the basis of survey 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree and other open ended questions as well.

Responses of the questionnaire are summarized and presented making use of SPSS software version 23. Though the sample size is 117, 124 questioners were distributed assuming a response rate of 95%. The questionnaires were distributed in the head office selected directorates. Due to the COVID 19 Pandemic questionnaires’ two and half months of time took to distribute and collect the questioners. In due time respondent were communicated and reminded through the phone and in person to return back the questioners in time. Through this effort 117 questioners out of 124 were collected.

Interview was conducted with 22 key informants of the study selected from 7 directorates at the head office.

3.7 Reliability and validity

The reliability of the questionnaire was checked by the Cronbach's-Alpha test coefficient using SPSS version 26.0 software and the result obtained was 0.752

Table 1 Cronbach's alpha test coefficient values

Reliability Statistics		
Cronbach's Alpha ^a	Cronbach's Alpha Based on Standardized Items ^a	N of Items
.752	.758	20

As Joppe M. (2000), stated that, Instrument validity pertains to the ability to accurately measure what to intend to measure based on objective of the study. It is used to make sure that all the relevant variables are included and irrelevant ones were excluded. It also assures all the variables considered are accurately measured

In this regard universally accepted sampling method was used to draw the selected sample of the population. Due emphasis was given to make the questions objective type and understandable so that the employees can answer the questions properly based on what they know. Vague and confusing wordings were avoided not to mislead the employees on the time of filling the questionnaires. The questionnaire was organized and finalized with a close consultation of expertise of the subject. To address Ambiguous claims, same spirited questions were forwarded to Key informant participants for triangulation purpose. Furthermore, secondary documentations were reviewed to verify factual claims made by respondents.

3.6 Ethical Consideration of the Research

The researcher has ensured the quality and integrity of this project work. The respondents pursued consent for participation with full awareness of what it is. The confidentiality and anonymity of the voluntary respondents will also be guaranteed. This independent and impartial project work considered not to cause harm to

respondents in what so ever way. Accordingly, the researcher optimally considered all the ethical perspectives.

CHAPTER FOUR DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter of the study deals with the analysis and interpretation of data collected from the questionnaire and interview taken from employees of the authority out of the 124 questioners distributed a total of 117 questioners were returned back and the analysis is conducted on those. Accordingly, tables and charts are used for ease of understanding.

Yesegat (2008, as cited in Lulseged, 2019) , argued that the response rate of 71.8% will be good in poor developing countries, like Ethiopia where data collection activity is very challenging. The response rate for this study is 92.7%, based on the above criteria it is considered as good. Based on the returned 117 questioners

4.1 Respondent Profile

4.1.1 Demographic characteristics of Respondents

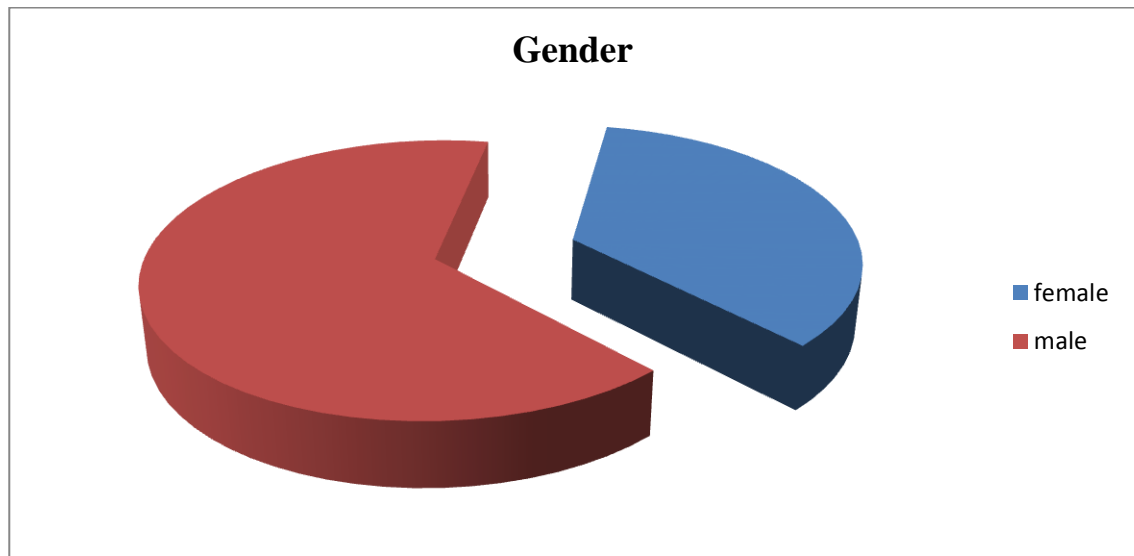
Table 4.1 Classification of the Respondent based on Gender

	Description	Frequency	Percent
Gender	Male	76	64.9
	Female	41	35.1
	Total	117	100

Source: Own Survey (2020)

This section classifies respondent based on their gender category. Based on the Table 4.1, out of the total respondent, (64.9%) of the respondent are males and the rest (35.1%) of them are females.

Figure 2: Respondents Gender



Source: Own Survey (2020)

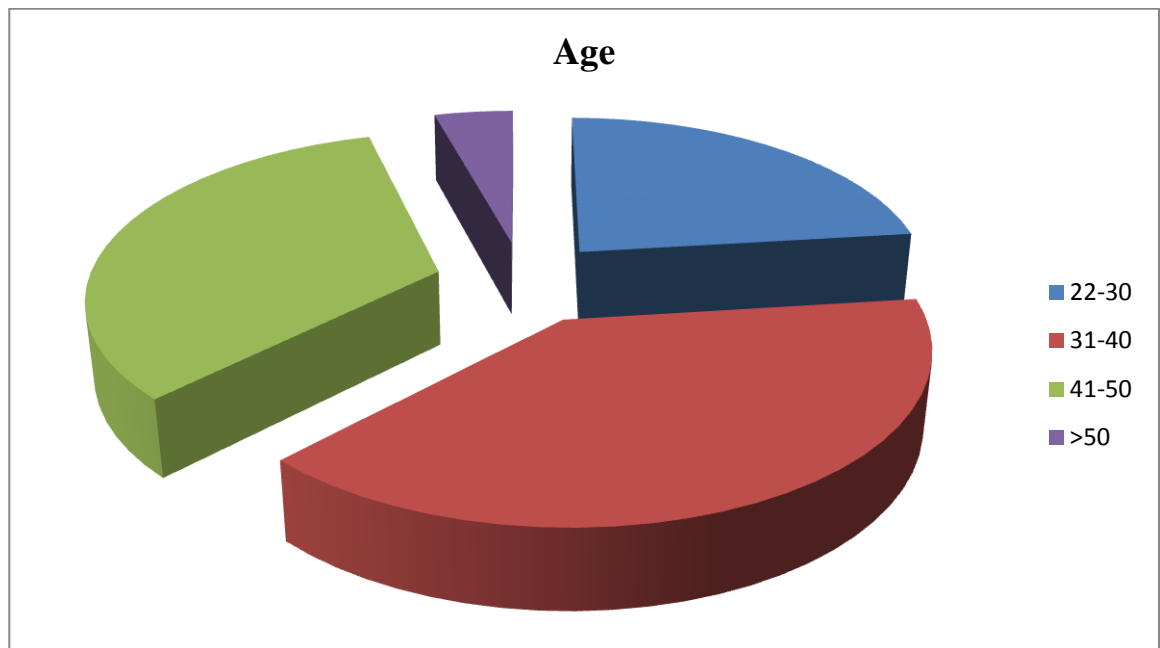
Table 4.2 Classification of the Respondent based on Age

	Description	Frequency	Percent
Age	22-30	27	23.1
	31-40	46	39.3
	41-50	39	33.33
	>50	5	4.27
	Total	117	100.0

Source: Own Survey (2020)

This section classifies respondent based on their Age category. Based on the Table 4.2, about 23.1 % of the respondents are under the age category of 22-30 years inclusive, 39.3% of the respondents are under the age category of 31-40 years inclusive, 33.33% are under the age of 41-50 and the rest 4.27% of them are more than the age of 50 years. These showed employees between the ages of 31-50 years take the major portion in the Authority.

Figure 3: Respondents Age



Source: Own survey

4.1.2. Socio Economic Status of the Respondent

Table 4.3 Classification of respondents based on their Education level

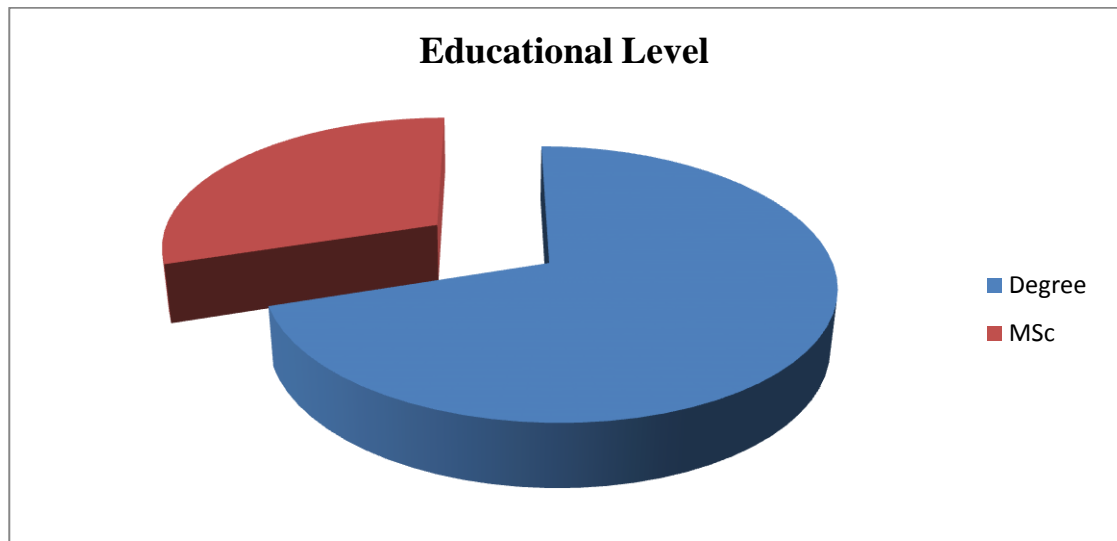
	Description	Frequency	Percent
Educational level	Degree	82	70.1
	MSc	35	29.9
	Total	117	100.0

Source: Own Survey (2020)

Educational background helps to show how that the data was collected from the respondents who have better knowhow of the construction industry and helps in the clarity of the response.

As per the table 3, about 70.1 % of them are degree holders and the rest 29.9 % are Masters Holder. This implies that degree holders are the leading employees in the authority.

Figure 4: Respondents Educational Level



Source: Own Survey (2020)

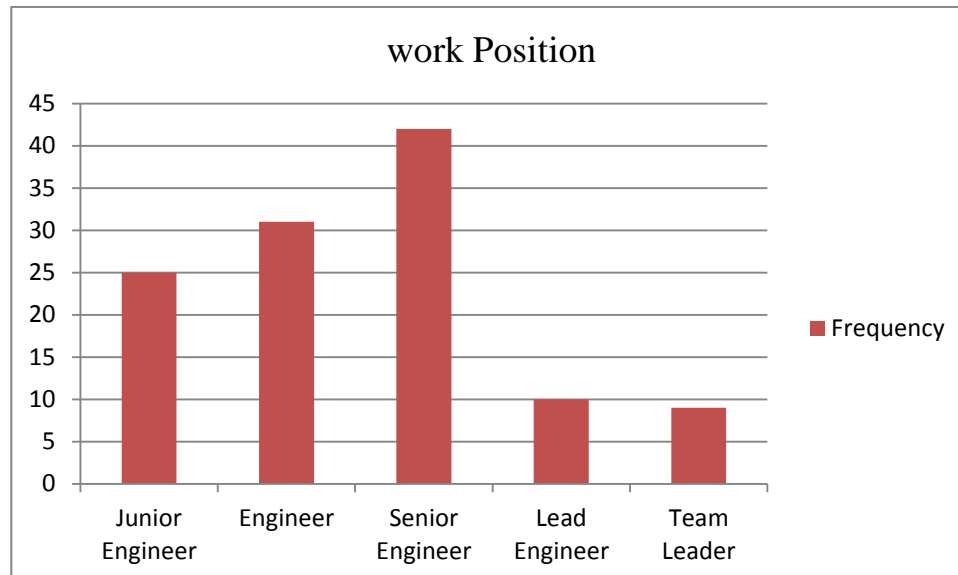
Table 4.4 Classification of respondents based on their Work position

	Description	Frequency	Percent
Work Position	Junior Engineer	25	21.3
	Engineer	38	32.5
	Senior Engineer	35	29.9
	Lead Engineer	10	8.55
	Team Leader	9	7.6
	Total	117	100.0

Source: Own Survey (2020)

Regarding the position of the respondents, Table- 4.4 above indicates that, 21.3 % of them are Junior Engineer, 32.5% of them are Engineer, 29.9 % are senior Engineer, 8.55% are Lead Engineer, and 7.6% are Team Leaders..

Figure 5: Respondents Wok Position



Source: Own Survey (2020)

Table 4.5 Classification of respondents based on their Work Experience

	Description	Frequency	Percent
Work Experience	<3 Years	27	17.9
	3-8 Years	41	35
	9-12 Years	37	31.6
	>12 years	12	10.25
	Total	117	100.0

Source: Own Survey (2020)

Based on the data on Table 4.5, 17.9 % of the respondents have an experience of less than 3years, 35% have an experience of 3 to 8 years, and 31.6% of them have 9 to 12 years of experience and 10.25 % of the have an experience of more than 12 years. This shows employees between work experiences of 3-12 years take the major part in the authority.

Figure 6: Respondents Work Experience



Source: Own Survey (2020)

4.2 contract administration practice of ERA.

4.2.1 Analysis based on Interview

An interview is “a conversation, whose purpose is to gather descriptions of the life-world of the interviewee” with respect to interpretation of the meanings of the ‘described phenomena’. It adds that an interview is an extendable conversation between partners that aim at having an ‘in-depth information’ about a certain topic or subject, and through which a phenomenon could be interpreted in terms of the meanings interviewees bring to it. Following Kvale (1996 as cited in Lulseged 2019), among the different interview techniques the researcher preferred to use an unstructured or open ended interview questions.

The interview in this research was held with 20 Engineers and 2 management from different regional directorate who are directly involved with the contract administration process. All of interviewees have educational background of civil engineering and construction management Engineering. They are all well experienced in the area of the construction and contract administration practices. The interview was held in the head office. It took 45 minute for each and a total of 16.5 hours.

4.2.2 Contract implementation process

The Engineering Procurement directorate is the one in charge for awarding the works and supervision contracts. After the contracts are signed an agreement with the employer, the contracts will be handed over to the respective Regional Directorate (East, West, South, North, Central, Express). The counterpart (Project Engineer) will be assigned to act as the hub for the project administration.

At the early stage of project implementation, the authority expects the consultant to provide different components of the road design aiming to check if the existing contract and reconciles with the actual physical, social, environment, economic and other conditions that could affect the performance of the works. While reviewing, there will be time and cost changes in the work contract.

ERA directly manages the mobilization of the Supervision Consultant and the Contractor. The Supervision Consultant, in turn, oversees the mobilization of the Contractor. During the implementation stages Quality Control and Quality Assurance will be prepared by the Contractor and supervision consultants. Activities such as preparing formats, checklists for quality follow up and quality assurance will be prepared by the consultant. Work programs that are prepared by the contractors will be approved by the supervision Consultant after the authority review and give comments on it. The consultant is expected to revise the Contractors Quality control plan and check the quality control system for every construction activities with the aim to ensure the project fulfills the requirements set for it.

4.2.3 The actual contract administration practice.

Administration of the contract implementation process in the organization is done through two steps. ERA, as an employer in the contract, administer the overall performance of the implementation process. The employer will act on limited issues that are identified in the contract. The consultant administers the overall site implementation process.

ERA conducts the major part of its contract administration (works contract) through the supervision consultant. The authority expects the supervision consultant to act as per the contract agreement.

The authority expects the supervision consultant to act as a contract administrator that manages implementation of the works contract and as technical expert that

analysis and examine the contractor and advise the employer of the changes that could increase the project's performance according to their contract agreement.

The Regional Directorates are the 'owners' of the implementation processes. The assigned counterpart (project) engineer within the Regional Directorate, in consultation with the team leader, follows the implementation processes. The project engineer acts as the hub of the communications from ERA's side whereby progress is monitored, efforts are coordinated and productions are conducted as per the standards set in the contract. Besides the follow up of the implementation processes, the Implementation and Design team is also responsible to channel any issue that needs the employer's hierarchical attention (such as changes). It also compiles progress reports and distributes same to the different bodies of the Authority.

4.2.3.1 Major activities expected from the consultant by the Employer

The construction supervision consultant plays a major role in the contract administration practice of the authority. The authority expects the consultant to ensure that the implementation contracts are in accordance with the technical specifications so it can meet the quality standards of the end products. The client expects the construction supervision consultant to optimize the used of construction material resources to minimize costs for the client and maximize the quality of the products.

4.2.3.2 Types of contracts ERA uses

A time based contract is used by ERA for supervision contracts and lump sum contracts for the design and feasibility studies. A hybrid type of contracts are used for design review and supervision service contracts., In this case of contracts the former part is paid on lump sum basis and the latter one is paid on a time based contract type. For a technical assistance projects lump sum and time based are used depending on the nature of the contract output and deliverables specified in their terms of reference.

4.2.3.3 Responsibilities of the Contract Administrator.

Project Engineer is the one who will be the center of communication from ERA side whereby progress is monitored, efforts are coordinated and productions are conducted as per the standards set in the contract. When contracts are signed between the contractor and consultant, the contract agreements place different responsibilities upon ERA and accordingly to the project Engineer. Through the

project Engineer, the authority will make sure if the construction works are being supervised properly. The main duties are to give the contractor access to and possession of site, to pay the contractor for all works undertaken, to approve and respond timely whenever required to do so by the contract and finally to take over the works when completed

4.2.3.4 Work Programme

The work programme is submitted by the Contractor. The project Engineers are the one who is responsible for the checking the progress against the programme. Detail time programmes are acceptable only when it is assessed as being workable by the authority

4.2.3.5 Variation in contracts

Variations are initiated either by the construction supervision consultant or by ERA. Variations are only effective once the writing has been signed by the authorized representative of both parties of the contract.

4.2.3.6 Extension of Time.

FIDIC 2010 Clause 8.4 provides for the extension of the period for completion in the event of a number of defined events. Extension of time for the supervision consultants are required for many reasons that are caused by default of either parties to the work contracts.

4.2.3.7 Claim

FIDIC 2010 clause 20.1 of the general condition require the Contractor to notify the Engineer as soon as practicable and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance which is likely to result in a claim (time or money). If the contractor fails to do that, the contractor will not extend the time or consider the additional cost in its payment.

4.2.3.8 Site Meetings

An initial site meeting is held between ERA for all projects, the supervision consultant and the contractor. Initial site meeting is helpful to establish the ground rules for the project and for the succeeding monthly progress meeting. Monthly site meetings provide an opportunity for ERA. Contractor and Consultant to discuss the

project in a formal environment and the results of these discussions are recorded and will be documented.

4.2.3.9 Reporting

Since the client is not involved in the day to day activities of the site, its information's source is only reports that are received from the supervision Consultant on site. Besides the reports from the Consultant other reports from any other parties are used. The form of reports are , monthly reports on the progress of the works, minute of meetings held on site and reports received from other parties after visiting to site. Monthly reports of each contract are prepared by the supervising consultant and submitted to the client on or before the seventh day of the month.

4.2.3.10 Risk and opportunity management

The authority has a risk and opportunity management procedures which are used on all projects. ERA project management team is the one who is responsible for initiating, identifying and managing risks on the projects in accordance with the procedures.

4.2.3.11 Payment Process

Payments to Contractor or Consultant are made through a Certificate process. The amount of payments to be paid is defined in the contract agreements. The payment mode depends on the types of contracts ERA signed with the parties.

4.2.3.12 Project closeout

All contracts have specified period for completion as per the contract agreements. When closing out a project ERA considers completion of the works, payments, statement at completion defect notification periods and project documents and records.

4.3 Analysis on the effectiveness of the contract administration practice.

4.3.1 Analysis based on Questionnaire Responses

Based on section 2.1 of the conceptual framework, the researcher constructed 20 parameters which are bases for effective contract administration practice. Based on these parameters primary data's were collected by using likert scale questionnaires

(1-Strongly Disagree, 2- Disagree, 3-Neutral, 4-Agree, 5- Strongly Agree) and the analyzed as follows.

According to Chileshe and Kikwasi (2014), the mean values which are driven from the 5 point likert scale can be rated and categorized as follows.

- 1) - $O \geq 1.80$ indicates very low extent or it is not very important.
- 2) - $1.8 \geq 2.6$ indicated low extent or not important
- 3) - $2.6 \geq 3.4$ indicates average or moderate value
- 4) - $3.4 \geq 4.2$ indicates important or large extent
- 5) - $4.2 \geq 5.0$ indicates very large extent or very important

Based on the criteria above the researcher evaluated the effectiveness of the contract administration practice of Ethiopian Roads Authority. Table 4.7, below shows analyses of the data collected from ERA staffs, who have direct relation with the contract administration practice and their response is coded and extracted in the SPSS Version 26.0 software .So, the table below indicates the descriptive statistics results based on 20 parameters which can help to evaluate the effectiveness of contract administration practice.

Table 4.6 Descriptive statistics

	N	Mini mum	Maximu m	Mean	Std. Deviation
Following up manuals and guideline	117	1	4	2.41	1.212
Skilled and experienced staffs	117	1	4	2.32	1.226
Risk identification and management	117	1	4	2.81	1.198
Scope change management	117	1	4	3.00	1.354
Appropriate scheduling of project completion time.	117	1	4	1.81	1.126
Quality assurance procedures	117	1	4	2.46	1.325
Appropriate allocation of project costs	117	2	5	3.32	1.313
Dispute resolution management	117	1	4	3.05	1.177
Updating manuals and guidelines using best practices	117	2	5	4.27	.732

Consistently using Ethiopian Roads Authority Management System ERAMS	117	1	5	3.08	1.256
Training of staff on contract administration practices	117	1	5	3.30	1.372
Monitoring and evaluation	117	1	5	3.84	.928
Well organized contract filing system	117	1	4	2.22	1.294
Problem in clearing Right of way (ROW)	117	1	4	2.70	1.372
Absenteeism and turnover of the staffs(Consultant & Contractor)	117	1	4	3.35	.857
Delay in effecting payments	117	1	5	2.95	1.373
Clear role and relationship of contract parties	117	1	5	4.38	.982
Top management support	117	2	5	4.65	.676
Timely response to a contracting parties	117	1	5	3.68	1.292
Contract close out procedures	117	1	5	2.49	1.446
Valid N (listwise)	117				

Source: Own Survey (2020)

The mean value for following up of manuals guideline and procedures, skilled and experienced staff, risk identification and management, well organized filing system, quality assurance of a project and contract closing out procedure activities are 2.41, .32, 2.81, 2.2 , 1.81, 2.46 and 2.49. This implies that following up of manuals guidelines and procedures, presence of skilled and experienced staff, risk identification and management, well organized filing system, quality assurance of a project and contract closeout of contract procedure are accomplished at extent of lowest level of performance.

As indicated the quality assurance of the projects activities performed at the lowest level. If the projects quality is not with in the expected requirements, there will additional cost for the maintenance and rework of the road projects.

The mean value for consistently using ERAMS, cleaning of Right of way problems, dispute resolution management, training of staff on contract administration

practices, appropriate estimating of contract costs and scope change management indicated 3.08, 2.7, 3.05, 3.3, 3.32 and 3. This implies that using ERAMS, problem in clearing of Right of Way, dispute resolution management. Training of staff on contract administration practices, appropriate estimating of contract costs, scope change management are accomplished at the extent of moderate level of performance

The mean value for monitoring and evaluation of a contract and timely response to contracting parties activities are 3.84 and 3.68. This implies the monitoring and evaluation and timely response to contracting parties are accomplished at a high extent level of performance.

The mean value for the top management support, updating manuals and guidelines, and clear role and relationship of a contract parties indicated 4.2, 4.27 and 4.65.this implies top management support, clear role and relationship of a contract parties, updating manuals and guidelines activities accomplished at a extent of highest level of performance.

This indicates that the authority updates the manuals and procedures and the role of the contracting parties (contractor consultant and employer) is clearly stated in their contract documents. There is also a high top management support to the staff. Through these activities the authority contract administration practice is effective.

Based on the above 5 performance categories, the contract administration was not effective in the activities of following up of manuals guideline and procedures,skilled and experienced staff, risk identification and management, well organized filing system, quality assurance of a project and contract closing out procedure. And the contract administration practice is in its moderate level of effectiveness in the activities of using ERAMS, problems in Right of Way clearing, dispute resolution management, training of staff on contract administration practices, appropriate estimating of project costs and scope change management (this means the project accomplish these activities with an average performance). Besides the project contract administration practice was effective in the activities of monitoring and evaluation of a contract and timely response to contracting parties'

activities. And finally it is very effective in top management support, updating manuals and guidelines, and clear role and relationship of a contract parties.

Standard deviation implies that deviation from the mean. In statistics data's who have small standard deviation indicates that values in a data are close to the mean and higher standard deviation means values in a data are far away from the mean. Based on this, Table 4.7 above indicates that there is a high standard deviation for the variables contract close out procedures, delay in effecting payments, problem in right of way clearing, appropriate estimation of projects costs and scope change management (1.446, 1.372, 1.372, 1.313, 1.352), which indicates there is a high variability between the responses given in measuring such variables when compared to the lower ones. And there is also a low standard deviation in the variables top management support, monitoring and evaluation, absenteeism and turnover of staff and updating manuals and guidelines (.676, .928, .857, .732), which indicates the variability between the responses are lower when compared with the higher ones. The rest variables have average standard deviation.

4.3.2 Analyses based on Document Review

According to Brown (2009), document review is a way of collecting data by reviewing existing documents. Documents may be hard copy or electronic and may include reports, program logs, performance ratings, funding proposals, meeting minutes, newsletters.. Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic.

Based on this, the researcher reviewed Ethiopian Roads Authority System Management reports which are in the hands of the Performance Quality and System management Directorate (PQSMD), Road Cost & System Management. Different Performance Reports have been reviewed to assess the performance of Projects with Respect to Cost overrun & Time overrun and the results are summarized below.

4.3.2.1 Cost Overrun projects in ERA

Table 4.7 Cost overrun contracts as per ERAMS Reports for the month of Dec29, 2019

Item no	Directorate	No of contracts	No Contracts that shows Variation order(VO) against the original contract price					Total contracts
			Percentage of VO(variation order) compared to the original contract Price					
			<10%	11-25%	26-50%	51-100%	>100%	
1	Central Region	26	26					26
2	Expressway	6	6					6
3	East Region	18	17	1				18
4	Northern Region	27	25	2				27
5	Southern Region	24	21	1	2			24
6	Western Region	26	25	1				26
7	Total project	127						127

Source: ERA, (2019)

As we can see from Table 4.5, all 127 projects have shown variation order compared to the original contracts Price. Due to scope changes, price adjustment the contracts has inquired additional cost. And this highly affects the overall budget of the road projects. Moreover it will affect the economy of the country.

4.3.2.1 Time overrun Projects in ERA

Table 4.8 Cost overrun contracts as per ERAMS Reports for the month of Dec29, 2019

Item no	Directorate	No of contracts	No Contracts that shows Delay against the Original Contract Period					
			Percentage of Extension of Time(EOT)) compared to the original Contract Duration					
			<10%	11-25%	26-50%	51-100%	>100%	Total delayed contracts
1	Central Region	26	21	1	2	1	1	26
2	Expressway	6	5	1				6
3	East Region	18	15	1	1	1		18
4	Northern Region	27	20	1	2	2	2	27
5	Southern Region	24	14		5	2	3	24
6	Western Region	26	18		2	5	1	26
7	Total project	127						127

Source: ERA (2019)

As we can see from Table 4.8, all 127 projects have shown delay against the original project duration. Extension of time are requested by Contractor and Consultant due to different reasons such as, additional scope in the contract, due to delay in contractor resource mobilization, problems in clearing Right of Way issues and delay in timely solving claim issues. This clearly shows that there is a lack of effective contract administration practice in the authority. Had the contracts time schedule estimated accurately , claims were solved on time and resource mobilization were on time the contracts wouldn't have inquired additional time and subsequently additional cost.

4.4 Analysis on the challenges that affect the contract administration practices

4.4.1 Major challenges on the contract administration practices

Open ended questionnaire was used to collect data for the study. The researcher has explored the respondent's responses regarding the major challenges which impeded the implementation practice of the contract administration, causes of claim and delay of contracts.

As identified by the key informants, the main challenges of contract administration practices are

- Insufficient trainings in contract management process
- Quality Assurance of the project
- Contract changes(cost, time and scope),
- Lack of Organized risk assessment at early stage of contract implementation,
- Problems in clearing right of way(Row),
- Using Traditional Filing system,
- High Turnover staff and absenteeism (consultant staff),
- Inappropriate scheduling of contract duration
- Inconsistency in following up Manuals and Guidelines ,
- Not considering factors that could affect delivery of a project,
- Project Closeout procedure problem.

4.4.2 Claim Issues on ERA Contracts

Respondent have indicated that there are claim issues on the contract administration practice. An increased no of claim of contractors has shown in contracts with alleged extension of time and its subsequent additional cost for different reasons. Most contractors present their claims after long time of the occurrence. This makes things to sort out evidence and knowledge of the objectives of the conditions at the time of the event. Respondent suggested that the causes for submitting claims could be wrong interpretation of the contract clauses, lack of responsible personnel or unavailability of skilled personnel who has information and attended the situation. Documentation is also another cause for delayed claims.

4.4.3 Delayed contracts and their causes in ERA projects

As it is indicated by most of the respondent contracts are delayed from their completion period and there are different reasons that cause delay in a contract administration of contracts. The causes are due to unexpected events while in the construction process and different contractual changes during construction works of the road projects. The causes of delay as indicated by the respondent are :Late response of the employer for contractor's request to extension of time(EOT) ,variation order(VO) and related cost and quality related issues; poor site recording or documentation; unreliable scheduling of contract duration; destruction of site activities due to Right of Way problems and causing delay in the contract completion time; unexpected adverse climatic conditions; additional design that are requested by the town administrator and delay to effecting invoices to the contractor.

4.4.4 Training on contract administration process

Interviewees agreed that, there is lack of sufficient trainings in contract administration process. They also added that some of the trainings provided to the Engineers are not based on the individual needs assessment and lacks relevancy. For example trainings such as claim dispute management and risk assessment trainings are given to new entrants (Junior Engineers) without them being involved at claims. Individuals with limited contract administration knowledge get to administer a large amount of different contracts and if the consultant has poor efficiency it will directly affect the performance of the contracts.

4.4.5 Contract changes (cost, time and scope)

During the interview, the staffs were able to provide information on the causes and results of contract changes based on their current and previous experiences of contract administration. Almost all interviewees agreed that there were contract changes because of cost overrun, delay and extension of time. Causes of delays of the contracts are lack of detail in work programmes and management of the contracts, improper study of contract modification form the supervising consultants and lack of poor documentation of the contract

4.4.6 Risk assessment

Interviewees indicated that, there is a challenge in identifying risk at post award phase of the contracts, most of ERA projects risk assessments are done at the stages of the pre award phase of the contracts which is the procurement phase that are associated in selection of a contractor. They indicated that risk management is not the role of the contract administration.

4.4.7 Inconsistency in following up Manuals and Guidelines

Interviewees agreed that there is a lack of consistency in following the manuals and guidelines and procedures, the organization has contract administration manuals but no mechanism are in place to make sure that existing guidelines and procedures are consistently being followed while administration the contracts

4.4.8 Scheduling of contract duration

Interviewees indicated that ERA determines the duration of contracts without considering factors that could affect the delivery of the projects and without scheduling based on the actual scope of the works. Determination of contract times are based on the length of road but not considering detail scheduling on the scope of the particular project and adaption of to the particular resource demands. This leads to mismatch the contract work programme duration and a realistic programme. This will be difficult for the contractor to plan realistic objectives that affect the overall contractor performance as well as the performance of the contract.

4.4.9 Resource mobilization

Interviewees indicated that major causes for poor project performance are resource mobilization during the project implementation phase. They highlighted that many projects shows delay in mobilizing resources from the contractor side. And this has affected the cost and time completions of the construction projects

4.4.10 Right of way

Interviewees indicated that, problems encountered regarding clearing of right of way and becoming a major cause for claims. When problems occur in ROW, proceeding construction activities are difficult without extension of time and variations cost.

ERA assigns Right of Way agents as a support to the regional directorates for Right of Way removal. The interviewees indicated that, the organization doesn't have a system to coordinate Right of Way obstruction removal. it doesn't have a system that organizes Right of Way obstruction removal and develops lesson learned, the authority has little control in the management of obstruction removal such as identifying and submission of obstruction lists timely and completing of compensation payments.

4.4.11 High Turnover staff and absenteeism (consultant staff)

Interviewees indicated that supervision consultant's staffs are not available on site and this highly affects project monitoring and supervision process. Additionally supervision staff turnover and absenteeism rates.

4.4.12 Ethical and professional behavior

Interviewees indicated that the current practice of ERA to identify malpractices are not effective because the authority monitor and controls its projects based on reports from its supervision Consultants and by going to project site occasionally. Also negligence and inappropriate conduct of the supervision consultant has an effect on the contract administration practice and affect the project performance.

4.4.13 Using ERAMS

Interviewees indicated that, the system that is designed to assist the project Engineers and managements of ERA are not using it consistently. They added that only few managements and Project Engineers are using the system in the day to day activities. This has affected the effectiveness of the contract administration practice

4.4.13 Filing system

Interviewees indicated that contract filing systems at the headquarters archives are using a traditional contract filling system, there is no official softcopy filing system. There are also skill gaps of archive personnel in managing contract files. As it's indicated from the interviewees, e-filing training has been given to all employees but there are no consistent and it's not implemented throughout all directorates

4.4.15 Problems in contract closeout

Interviewees showed that there are no contract closeout procedures and related check lists that is used in the acceptance stage of the contracts. The challenges are at project hand over stages different professionals have different checklists.

Interviewees indicated that the use of checklist of closeout procedures highly useful for assurance of all actions have been completed .it should be part of the contract files and should be used when contract are closing. It should include verification to ensure that all invoices have been paid, all properties have been returned, all deliverables have been accepted, the required reports have been paid, and there are no pending lawsuits

Chapter Summary

This chapter presented the results and overall findings of the research study. The main purpose of these analyses has been to answer the relevant research questions. To achieve these objectives, various analyses methods were applied to the data using descriptive statistics..

The first sub topic entitled Demographic characteristics of the respondents comprised employees' gender, age, educational level, work experience and position. Finding from this sub topic showed employees between the ages of 31-50 take the major share and individuals with BSc Degree the leading employees of the Authority.

The contract administration practices were assessed using interview. Under this sub topic, it's shown that overall the contract administration practice, the major activities expected from the consultant, contract types ERA uses and Responsibilities of the contract administrator has been identified.

The second topic was to evaluate the effectiveness of the contract administration practice of the authority. Result from likert scale analysis on practice of CA as rated by the employees showed that the contract administration practice was not effective in the activities of following up of manuals, guideline and procedures, skilled and experienced staff, risk identification and management, well organized filing system, quality assurance of a project and contract closing out procedure. And the contract administration practice is in its moderate level of effectiveness in the activities of using ERAMS, problems in Right of Way clearing, dispute resolution management, training of staff on contract administration practices, appropriate estimating of

project costs and scope change management (this means the project accomplish these activities with an average performance). Besides the project contract administration practice was effective in the activities of monitoring and evaluation of a contract and timely response to contracting parties' activities. And finally it is very effective in top management support, updating manuals and guidelines, and clear role and relationship of a contract parties. ERAMS documents indicated that all projects have shown variation order compared to the original contracts Price. Scope changes, price adjustment and other issues related to cost are the reasons for the variation order. Also delayed against the original project duration has indicated on projects. Due to reasons such as, additional scope in the contract, due to delay in contractor resource mobilization, problems in clearing Right of Way issues and Delay in timely solving claim issues. this shows that the contract administration practice on the authority is not effective .

The third part was on the challenges that affect the contract administration practices. Based on the interview, it is revealed that there are challenges in Insufficient trainings in contract management process , Unwanted contract changes(cost, time and scope), Lack of Organized risk assessment at early stage of contract implementation, Poor project performance, Unethical practices, Problems in clearing right of way(Row), Using Traditional Filing system, High Turnover staff and absenteeism (consultant staff), Inappropriate scheduling of contract duration Inconsistency in following up Manuals and Guidelines , Not considering factors that could affect delivery of a project,

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

Based on the data presentation, analysis and interpretation in the fourth chapter, this chapter presents the Summary, Conclusion and Recommendations. Finally, it presents areas of future research

This study attempted to assess the contract administration practice of road projects in Ethiopian Roads Authority and tried to evaluate the effectiveness of the contract administration practices. It also tried to measure the performance of the contracts with respect to time cost and quality. Furthermore the study tried to identify the challenges in the contract administration practice The study employed both interview and questionnaires to collect primary data. The interview was held with 22 project Engineers and managements of the authority to triangulate the data collected using the survey. The information gathered was further analyzed descriptively by comparing it with the conceptual and theoretical frameworks Thus based on such analysis the following conclusions are drawn:

5.1 Summary, Key Findings and Conclusion

- ❖ Results have showed that, the authority conducts the major part of its contract administration (works contract) through the supervision consultant. The authority expects the supervision consultant to act as per the contract agreement accordingly. ERA, as an Employer in the contract, administer the overall performance of the implementation process. The employer will act on limited issues that are identified in the contract. The consultant administers the overall site implementation process.
- ❖ From the findings, the contract administration practice of the authority is not effective in the activities of following up of manuals guideline, the authority has contract administration manuals but no mechanism are in place to make sure that existing guidelines and procedures are consistently being followed while administration the contracts.

- ❖ The findings showed that the contract administration practice is in its moderate level of effectiveness in the activities of using ERAMS, cleaning of Right of way problems, dispute resolution management, training of staff on contract administration practices, appropriate estimating of contract costs and scope change management (this means the project accomplish these activities with an average performance).
- ❖ Besides the project contract administration practice was effective in the activities of monitoring and evaluation of a contract and timely response to contracting parties' activities. And finally it is very effective in top management support, updating manuals and guidelines, and clear role and relationship of a contract parties.
- ❖ The results confirmed that, there are claim issues on the contract administration practice. An increased no of claim of contractors has shown in contracts with alleged extension of time and its subsequent additional cost for different reasons. Most contractors present their claims after long time of the occurrence. This makes things to sort out evidence and knowledge of the objectives of the conditions at the time of the event. Respondent suggested that the causes for submitting claims could be wrong interpretation of the contract clauses, lack of responsible personnel or unavailability of skilled personnel who has information and attended the situation. Documentation is also another cause for delayed claims
- ❖ Contracts are delayed from their completion period and there are different reasons that cause delay in a contract administration of contracts. The causes are due to unexpected events while in the construction process and different contractual changes during construction works of the road projects.
- ❖ Projects have shown variation order when it compared to the original contracts Price. This is because due to the additional scope changes, price adjustment and the extended time in the contract period.. Extension of time requested by Contractor and Consultant due to different reasons such as, additional scope in the contract, due to delay in contractor site mobilization and Right of Way issues, Delay in timely completing claim issues
- ❖ The findings identified the challenges in the contract administration such as Insufficient trainings in contract management process, Unwanted contract

changes(cost, time and scope), Lack of Organized risk assessment at early stage of contract implementation, Poor project performance, Unethical practices, Problems in clearing right of way (Row), Using Traditional Filing system, High Turnover staff and absenteeism(consultant staff), Inappropriate scheduling of contract duration, Inconsistency in following up Manuals and Guidelines ,Not considering factors that could affect delivery of a project., Project Closeout procedure problem.

5.2 Recommendation

The following recommendations are provided based on the findings and conclusions made on the contract administration practice of Ethiopian Roads Authority.

- The authority should develop a mechanism of verification to ensure that the manuals, guideline and procedures of different contracts are followed by the contract administrator of the project.
- An intensive training on the basic contract administration process and methods should be given to new entrant (juniors Engineers) and, who will be engaged on administrating contracts. The trainings such as claim and dispute management issues, risk management, design changes, material and quality test, Right of way issues management and contract change (scope, time, cost) management. Also trainings should be given by assessing the individual needs of the employer.
- The authority should assess the causes that contribute to cost increase and delays of projects. When designing the contracts cost and time .consideration shall be made on the unforeseen factors that could affect projects' overall performance.
- Attention shall be given to Right of Way issues because they are the cause for a contract to lag behind schedule.
- Resource mobilization of contractors should be monitored. Delays on resource mobilization are the cause of untimely completion of contracts and subsequently request of extension of time. So, measurements should be stricter on contractors that fail to mobilize their resources as per the contractual agreement.
- The authority should develop all-inclusive contract closeout checklists that should be used by the contract management's employees of different directorates that are assigned in the contract closure.

- The authority's Risk management plan shall comprise risks of pre and post awards of contract activities.
- Proper Documentations system is a fundamental for an effective contract administration practice as well as for monitoring of contracts. Training on contract filing procedures should be given to Directorates' archive staffs. The authority shall make sure that the e-filing system is using throughout the directorates.
- The authority shall enforce the employees in using ERAMS.

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Appendix A

ST.MARY’S UNIVERSITY

School of Graduate Students

Department of Project Management

Questionnaire

Dear Respondent:

This questionnaire has been prepared in view of assessing the objectives of research titled “Assessment of Contract administration practices in the case of Ethiopian Roads Authority.” The purpose of the study is to examine the contract administration practice.. The primary objective of the questionnaire is to collect data, information & opinion for the conduct of a Thesis for partial fulfillment of the requirement for award of Master of Project Management.

Participation in this project is completely voluntary. Results will be recorded anonymously, and strict confidentiality will be maintained. Individual responses will not be identified in the Researcher’s project work

The questionnaire has two parts: Part -I is about your personal information. Part-II is the overall questions about contract administration practices. Please give your honest response to each item.

Thanking you in advance for your valued time & cooperation, the researcher believes that your genuine response, opinions & views are used only for academic purpose.

Tsige Tsegaye.

The Researcher

Part I - Personal Information

N.B: Please give your answer on the space provided & put tick a mark in the box corresponding to your response

Sex Male Female

Age 20- 30yrs 31 -40yrs 41-50yrs 51yrs & above

Educational Background B.Sc. M.Sc.

Position of the Respondent Junior Engineer Engineer Sr, Engineer
Lead Engineer Team Leader

Number of Year Experience
Less than 3 yrs. 3-8 yrs. 9-12 yrs. More than 12 yrs.

PART –II - Close ended questionnaires

Pease use a tick (√) mark for your thought and where appropriate give your opinion for the open ended questions.

1. Factors for the effectiveness of a contract administration practice of ERA

Item	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	Following up manuals and guideline					
2	Skilled and experienced staffs					
3	Risk identification and management					
4	Scope change management					
5	Appropriate scheduling of project completion time.					
6	Quality assurance procedures					
7	Appropriate Estimation of project costs					
8	Dispute resolution management					
9	Updating manuals and guidelines using best practices					
10	Consistently using ERAMS					
11	Training of staff on contract administration practices					
12	Monitoring and evaluation					
13	Well organized contract filing system					
14	Problem in clearing Right of way (ROW)					
15	Absenteeism and turnover of the staffs(Consultant & Contractor)					
16	Delay in effecting payments					

17	Clear role and relationship of contract parties					
18	Top management support					
19	Timely response to a contracting parties					
20	Contract close out procedures					

Part –III - Open ended questionnaires

1. What do you think are the main challenges that affect the Contract administration practice?

2. Are there issues in managing claim in administration contracts? If there are, what are the challenges?

3. What are the causes of delay in a contract that you are administrating?

4. Do you have any opinions and comments that have not been included in the aforementioned questions?

Appendix B

INTERVIEW QUESTIONS

Good morning/ afternoon/ evening Sir/ Madam:

My name is Tsige Tsegaye. I am a post graduate student of St. Mary's University, School of Graduate Studies; department of Project Management. Currently, I am conducting a research entitled —Assessment of Construction Contract Administration Practices of Ethiopian Roads Authority —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 contract administration practice of ERA and to assess the challenges on the challenges you have faced when you administrating contracts. 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 did the overall contract administration practice look like?
2. What did the Contract administration look like in the in the project implementation phase.
3. What kind of contract types ERA uses?
4. What major activities are expected from the consultant
5. What are the Roles and Responsibilities of the Contract administrator /Project Engineer?
6. Are the manuals and Guidelines of ERA followed consistently by the user?
7. Do contracts have procedures to address disputes?
8. Are there issues in ethical and professional behavior?
9. Are there challenges when managing changes in contracts?
10. Are there challenges in claim management?
11. Are there challenges in timely mobilization of resource by contractor?
12. Did you receive sufficient and relevant trainings before administrating a contract?
13. Are risks identified in pre and post award of projects?

- 14.** What are the challenges in clearing Right of Way problems?
- 15.** What does ERAS' documentation system look like?
- 16.** Are there turnover and absenteeism of staffs in a contract that you are administrating?
- 17.** What were the challenges you faced when you close out a contracts?

APPENDIX C

ERAMS – Status Summary Report

Activity/ Region		Central	Express	East	North	South	West
Period(month)		Dec,2019	Dec,2019	Dec,2019	Dec,2019	Dec,2019	Dec,2019
Project in ERAMS / Actual in the region		26/28	6/6	18/18	27/31	24/26	26/28
Measurements Updated Oct-Dec,2019		8/26	2/6	9/18	20/27	8/24	7/26
Aged contract	Contract Run out of contract Period	1/26		1/18	2/27	6/24	
	Contract running for ≥ 3 and <5 years	8/26	2/6	12/18	7/27	7/24	8/26
	Contract running for ≥5 years	5/26		2/18	6/27	13/24	8/26
Delay\advance	>100 weeks			1/18	4/27	6/24	5/26
	48-100 weeks	11/26	3/6	9/18	10/27	10/24	7/26
	24-48 weeks	10/26		5/18	9/27	4/24	8/26
	8-24 weeks	1/26		1/18	3/27	1/24	1/26
	4-8 weeks	1/26	1/6				3/26
	≤ 4 weeks	3/26		2/18	1/27	3/24	2/26
VO against the original Contract Price	<10 (%)	26/26	6/6	17/18	25/27	21/24	25/26
	[11-25] (%)			1/18	2/27	1/24	1/26
	[26-50] (%)					2/24	
	[51-100] (%)						
	>100 (%)						
EoT against the original Contract Period(duration)	<10 (%)	21/26	5/6	15/18	20/27	14/24	18/26
	[11-25] (%)	1/26	1/6	1/18	1/27		
	[26-50] (%)	2/26		1/18	2/27	5/24	2/26
	[51-100] (%)	1/26		1/18	2/27	2/24	5/26
	>100 (%)	1/26			2/27	3/24	1/26

- N.B. :- In all cases/parameters the reference is from the no. of projects inserted in ERAMS except for the first parameter i.e. Project in ERAMS / Actual in the region.