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School of Commerce
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**Practices and Challenges in Contract Management of Construction Sector: The
Case of Ethiopian Construction Design and Supervision Works Corporation**

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Business and Economics, School of Commerce in Partial Fulfillment of the
Requirements for the Degree of Master of Arts in Project Management**

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Statement of Declaration

I, the undersigned, declare that this study entitled “Practices and Challenges in Contract Management of Construction Sector: The Case of Ethiopian Construction Design and Supervision Works Corporation (ECDSWCo)” is my own work. I have undertaken the research work independently with the guidance and support of my advisor. This study has not been submitted for any degree or postgraduate program in this or any other institutions and that all sources of materials used for the work have been duly acknowledged.

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Statement of Certification

This is to certify that the project work prepared by Amanuel Haile, entitled: *“Practices and Challenges in Contract Management of Construction Sector: The Case of Ethiopian Construction Design and Supervision Works Corporation (ECDSWCo)”* and submitted in partial fulfillment of the requirements for the Degree of Master of Arts in Project Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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ACRONYMS

ADB-Asian Development Bank

ANAO- Australian National Audit Office

CMP- Contract Management Plan

COAA- Construction Owners Association of Alberta

DEO-Department of Energy, USA

ECDSWCo- Ethiopian Construction Design and Supervision Works Corporation

FIDIC-Fédération Internationales Des Ingénieurs Conseils (International Federation of Consulting Engineers)

PMBOK-Project Management Book of Knowledge

PMI-Project Management Institute

QMS -Quality Management System

SANT- South African National Treasury

SD- Standard Deviation

SPSS V24- Statistical Package for Social Sciences, Version 24

Abstract

The purpose of this study is to assess the current practices and the challenges faced in the contract management of construction projects supervised by ECDSWCo's in Ethiopia. The study adopts cross-sectional survey descriptive research with quantitative and qualitative approaches to describe the practices and their challenges. Using non-probability purposive sampling, a sample of relevant 40 respondents is obtained who are working in the contract management of various types of construction projects designed and supervised by the company. The theoretical basis for the study is the practices and challenges in contract management. The collected data are analyzed by SPSS version 24 using descriptive statistics analyses. From the analysis, most practices are implemented practically by the company and the remaining ones need due attention for in order to manage the contracts effectively and efficiently. The study also finds the challenges faced by the company in managing the project contracts and recommends ways how to tackle them. Finally the study recommends best contract management practices to which the construction sector and project management bodies may consider for their effective contract management.

Key Words: Contracts, Contract Management, Contract Management Practices, Contract Management Challenges

CHAPTER1: INTRODUCTION

1.1. Background of the Study

Construction is an indispensable industry to improve the living standard of any society across the world. From the context of world economic activities, its socio-economic significance becomes obvious. In Ethiopia it is one of the biggest industries which contribute to significant socio-economic development of the country. In almost construction project activities, a number of contracts are formed between project owner and contractor or between contractor and sub-contractors for desired deliverables after successful completion of the project.

The management of construction contract includes the establishment, fulfillment, claim, breach and termination of the contract. The contract involves huge investment, wide technical requirements, complex construction activities, large impact on society and long life cycle. Correspondingly, the rights and obligations of the parties to the contract will also become relatively complex (Tianxin, 2020)

According to Julius and Gershon (2020), contract management is defined as the practice that guarantees both interested groups to a contract that completely satisfies their separate duties competently and effectively in order to provide the operational goals necessary from the contract and specifically to offer value for money.

Contract management necessitates a process of efficient and systematic management of contract creation, implementation and analysis in order to maximize financial and operational performance, as well as minimize risks (World Bank, 2018).

Contract management is the active monitoring and control of the contract between the procuring and disposing entity and the contractor, to ensure delivery of a cost effective and reliable service at an agreed standard and price. It is the final stage in the bidding process and marks the beginning of a contractual relationship between the procuring and disposing entity and the contractor (Moses and Arthur, 2018).

The success of a project is often judged on the construction performance because this activity is highly visible. The success is also influenced by the accuracy and details of its documentation, the understanding between parties and acceptance of their particular responsibilities, how

professionally and accurately the day to day administration is handled and how conflict or contractual problems are resolved.

Managing contract is an important aspect of project management to achieve the project objectives. In other words contract management is the major managerial activity that ensures whether the project achieves its objective or not. Through good contract management practices, organizations are able to maintain excellent governance of projects and quality of service to stakeholders. A well established and mature contract management can generate a great deal of significant savings both for the project owner and the contractor.

1.2. Background of the Organization under Study

The Ethiopian Construction Design & Supervision Works Corporation (ECDSWCo) is a public organization founded by amalgamation of three companies: Water Works Design & Supervision Enterprise (WWDSE), Construction Design Share Company (CDSC) and Transport Construction Design & Share Company (TCDSC) that have been engaged in planning, study, design, construction supervision of water and hydropower, building and transport road works since 1998, 1977 and 1987 respectively. It is a fully integrated engineering consulting firm giving consultancy services with six business units in areas of water and energy, building and urban, transport, geo-technics and underground works which are supported by fully organized & dedicated two centers; One with advanced laboratory & research, the other with surveying, geospatial and civil informatics.

Therefore looking into contract management practices and the challenges facing on the company is important because the majority of the projects that the company works on are strategic public mega projects that include building and urban, transport, water, energy and underground construction works and to name some of them are University Capacity Building Program (UCBP), housing development and transport road sector programs.

1.3 Statement of the Problem

The construction industry in Ethiopia has been developing tremendously since 2001. Recent study by (Zewdu & Aregaw, 2015) indicated that the GDP contribution of the industry has been raised to 5.6% and approaches to the sub Saharan average (6%). Since then, the country has been implementing significant number of construction programs/projects, which include higher

educational institution constructions under University Capacity Building Program (UCBP), housing development, transport road sector, hydroelectric dams and water supply and irrigation works.

The performance record of implementation of these construction projects is not encouraging in delivering the intended objectives. Even though due importance and emphasis are given to these public sectors construction projects, most of them are experiencing poor contract management and in some cases contract management is overlooked. One of the reasons for such low level of contract management is that the contracting parties are not enthusiastic about it and take the practices of contract management for granted rather than carry out their responsibilities and obligations according to the terms and conditions of the contract agreed upon.

According to the Ministry of Finance and Economic Development report (2015), one of the major problems for project failure is the lack of proper contract administration resulting in disputes, claims and counter claims, time and cost overruns, and contract cancellations. These problems have become the norm rather than an exception in our country which signify major challenges and concern for the construction industry. Consequently, there are increased number of litigations, wastage of resources, negative reputation of contractors and professionals involved in the projects.

When big project is awarded to one construction company, in most instances, some works are executed by sub contractors in which case the owner and the consultant of the project do not have control on these sub contractors as they are accountable only to the main contractor thereby creating challenges for the consultant/contract manager to manage the contract. On the other hand, issues are also raised about the contract manager's competency, professionalism and ethics when dealing with the contracts.

Rendon(2008) identified the challenges in his analysis of procurement process in federal government projects in America to exist within the process areas of contract administration, contract closeout, procurement process integration and teaming, contract management knowledge sharing and training issues.

Yehyes(2021) has also found in his study the major challenge and problem of managing federal road construction projects contracts in Ethiopia to be poor communication, not properly drafted

contract, unrealistic condition of contract, lack of experience and knowledge in contract administration.

Eventhough few researches have been done about contract management practices and their challenges in Ethiopia, there is low awareness and due consideration given by the project management body of the construction industry.

Hence, this study assesses the practices and challenges faced in contract management of construction projects supervised by Ethiopian Construction Design and Supervision Works Corporation (ECDSWCo) as it is very important step to understand both aspects of managing contracts and recommend best practices for effective contract management.

1.4 Research Questions

After completion of this research, the questions that are answered include the following

1. What are the practices of contract management adopted by ECDSWCo in managing construction projects in Ethiopia?
2. To what extent are these practices applied practically?
3. What are the challenges faced in managing the contracts?
4. What are the best practices recommended for managing the contracts in construction sector?

1.5 General Objective of the Study

The general objective of this study is to assess the current practices and the challenges faced in ECDSWCo's contract management of construction projects in Ethiopia.

1.6 Specific Objectives of the Study

Based on the problems stated, this study undertakes the following specific objectives

1. To assess ECDSWCo's contract management practices for construction projects in Ethiopia
2. To measure the extent how these practices are practically applied in managing contracts
3. To examine the challenges faced by ECDSWCo in managing contracts
4. To recommend best contract management practices for construction projects

1.7 Significance of the Study

Contract management is part of project management and plays a significant role in managing project activities. Project success can be attributed to many factors, one of which is good

contract management practices. This study helps contractors, clients, consultants and other parties involved in contract management by creating the awareness about the importance of good contract management practices and ways of tackling their challenges.

Thus, after completion of this research, the results are important for

1. To show that what are the current contract management practices exercised by ECDSWCo and to what extent they are applied.
2. To show the practical challenges faced by ECDSWCo in managing the contracts entered between the client and contractors
3. To recommend good contract management practices for efficient and effective contract management of construction projects

1.8 Scope of the Study

The scope of the research is limited to assessing the contract management practices adopted and the challenges faced for construction projects supervised and controlled by ECDSWCo. The projects include public building complexes, transport roads, water works and other infrastructures.

1.9 Definition of Terms

Project: According to the PMI (2013), “a project is a temporary endeavor undertaken to create a unique product, service, or result.”

Project Management: Kerzner (2013, pp.4) defines project management as “the planning, organizing, directing, controlling of company resources for a relatively short period that has been established to complete specific objectives and goals.”

Contract: According to the PMI (2013), a contract is a mutually binding legal agreement that obligates the seller (the consultant/contractor/supplier) to provide the specified products, services or results and obligates the buyer (client) to compensate the seller.

Contracting Strategy: is a basic strategy for contracting of the project which describes a set of planned contracting decisions and activities that are aligned with and support the projects goals, objectives and key success factors (COAA, 2018, pp.7).

Contract Management: is a process that ensures all parties to a contract fully meet their obligations, in order to satisfy the operational objectives of the contract and the strategic business goals of the customer (John and Arjan, 2014)

Contract Management Plan: a plan that shows how, when, where and by whom a contract will be implemented, monitored, managed and administered (World Bank, 2018).

Contract Management Practices: usually refers to all the activities done by contract management team to ensure that the parties undertake their duties in accordance to the terms and conditions of the contract specifically and to all set standards in the construction industry (Ochola, 2018).

CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 Introduction

Contract management is becoming an integral part of project management, and business in general. Many commercial and project managers are more and more facing contract management issues. For projects of all types, different contracts are structured, negotiated, concluded and fulfilled (SANT, 2010).

2.1.2 Contract

The contract is the central element of every project activity. The contract is an agreement entered between the parties for the delivery of product or service through the supply of labor and materials. First, a valid contract must be sufficiently certain to have a practical meaning and before execution the parties shall agree on all terms and conditions of the contract. Second, there must also be an agreement on the consideration of the payment terms. Third, the contract must be in writing. A contract is not easily enforceable if it remains entirely as an oral agreement and without written evidence (Edward, 2005).

2. 1.3 Types of Contracts

Experience shows that owners can often reduce their construction costs by giving careful thought to the type of contract that best suits their requirements and objectives. The chances for a successful construction process are enhanced by thoughtful and thorough study about contract type before the process is initiated. The careful analysis and consideration of risk during field construction is a critical issue. Typical contract choices force either the contractor or the owner to bear most of the risk. Each of these contract types has its advantages, but there are variations that assign construction risks to the party that can best manage and control them (Richard, et al., 2015).

There are many different types of construction contracts, distinguished primarily by the method of determining the final contract price. Moreover, the type of contract chosen may depend on several factors, including the identity and relationship of the owner and contractor, the completeness of the design and its complexity, the type of work being done and the need for

competitive pricing. According to the PMI (2013), construction contracts are broadly classified as:

- (1) Fixed-Price Contracts,
- (2) Cost-Reimbursable Contracts, and
- (3) Time and Material Contracts.

2. 1.3.1 Fixed-Price Contracts

This category of contracts involves setting a fixed total price for a defined product, service, or result to be provided. Fixed-price contracts may also incorporate financial incentives for achieving or exceeding selected project objectives, such as schedule delivery dates, cost and technical performance, or anything that can be quantified and subsequently measured. Sellers under fixed-price contracts are legally obligated to complete such contracts, with possible financial damages if they do not. Under the fixed-price arrangement, buyers need to precisely specify the product or services being procured.

Fixed-Price contracts are categorized as (i) Firm Fixed Price Contracts, (ii) Fixed Price Incentive Fee Contracts and (iii) Fixed Price with Economic Price Adjustment Contracts whose details are presented below.

Firm Fixed Price Contracts (FFP)

The most commonly used contract type is the firm fixed price. It is favored by most buying organizations because the price for goods is set at the outset and not subject to change unless the scope of work changes. Any cost increase due to adverse performance is the responsibility of the seller, who is obligated to complete the effort. Under this contract, the buyer should precisely specify the product or services to be procured, and any changes to the procurement specification can increase the costs to the buyer

Fixed Price Incentive Fee Contracts (FPIF)

This fixed-price arrangement gives the buyer and seller some flexibility in that it allows for deviation from performance, with financial incentives tied to achieving agreed upon metrics. Typically such financial incentives are related to cost, schedule, or technical performance of the seller. Performance targets are established at the outset, and the final contract price is determined after completion of all work based on the seller's performance. Under this contract, a price

ceiling is set, and all costs above the price ceiling are the responsibility of the seller, who is obligated to complete the work.

Fixed Price with Economic Price Adjustment Contracts (FP-EPA)

This contract type is used whenever the seller's performance period spans a considerable period of years, as is desired with many long-term relationships. It is a fixed-price contract, but with a special provision allowing for pre-defined final adjustments to the contract price due to changed conditions, such as inflation changes, or cost increases (or decreases) for specific commodities. This contract is intended to protect both buyer and seller from external conditions beyond their control.

2. 1.3.2 Cost-Reimbursable Contracts

This category of contract involves payments (cost reimbursements) to the seller for all legitimate actual costs incurred for completed work, plus a fee representing seller profit. Cost-reimbursable contracts may also include financial incentive clauses whenever the seller exceeds, or falls below, defined objectives such as costs, schedule, or technical performance targets. Three of the more common types of cost-reimbursable contracts in use are Cost Plus Fixed Fee (CPFF), Cost Plus Incentive Fee (CPIF), and Cost Plus Award Fee (CPAF). A cost-reimbursable contract provides the project flexibility to redirect a seller whenever the scope of work cannot be precisely defined at the start and needs to be altered, or when high risks may exist in the effort.

Cost Plus Fixed Fee Contracts (CPFF)

The seller is reimbursed for all allowable costs for performing the contract work, and receives a fixed-fee payment calculated as a percentage of the initial estimated project costs. A fee is paid only for completed work and does not change due to seller performance. Fee amounts do not change unless the project scope changes.

Cost Plus Incentive Fee Contracts (CPIF)

The seller is reimbursed for all allowable costs for performing the contract work and receives a predetermined incentive fee based upon achieving certain performance objectives as set forth in the contract. In these contracts, if the final costs are less or more than the original estimated costs, then both the buyer and seller will share costs from the departures based upon a pre-negotiated cost-sharing formula.

Cost Plus Award Fee Contracts (CPAF)

The seller is reimbursed for all legitimate costs, but the majority of the fee is earned only based on the satisfaction of certain broad subjective performance criteria defined and incorporated into the contract. The determination of fee is based solely on the subjective determination of seller performance by the buyer, and is generally not subject to appeals.

2.1.3.3 Time and Material Contracts (T&M)

Time and material contracts are a hybrid type of contractual arrangement that contains aspects of both cost-reimbursable and fixed-price contracts. They are often used for staff augmentation, acquisition of experts, and any outside support when a precise statement of work cannot be quickly prescribed. These types of contracts resemble cost-reimbursable contracts in that they can be left open ended and may be subject to a cost increase for the buyer. The full value of the agreement and the exact quantity of items to be delivered may not be defined by the buyer at the time of the contract award. Thus, these contracts can increase in contract value as if they were cost reimbursable contracts. Conversely, they can also resemble fixed unit price arrangements when certain parameters are specified in the contract. Unit labor or material rates can be preset by the buyer and seller, including seller profit, when both parties agree on the values for specific resource categories.

2.1.4 Procurement Contracting Strategy

When launching major capital or infrastructure project, the project owner must select a basic strategy for contracting the project. Various approaches exist and for good reasons, the choice of the contracting approach could affect the outcome of the project. The strategy must be selected with careful consideration of not only the potential upside of the approach, but also the demands each strategy places on the owner's organization. Any of these strategies can result in undesirable consequences if it is selected without the necessary resources in place.

According to the (FIDIC, 1998), there are four processes in project contracting strategy that determines how the services are to be provided. These processes are:

- Engineering(E)
- Procurement(P)
- Construction(C) and
- Management(M)

Decisions on how these services are to be provided, and the legal and financing arrangement for their provision, should be made as early in the project life cycle. The way in which the engineering, procurement, construction and management services are grouped and provided to a project is called project delivery choice that determines the project contracting strategy to which commercial and contractual terms and conditions can be applied accordingly.

2.1.5 Standard Forms of Contract

According to the (FIDIC, 1998), there are four standard forms of contracts used in construction as discussed here under.

2.1.5.1 Build Contract

This is recommended for building or engineering works designed by the client or his consultant. Under this type of contract, the contractor constructs the works in accordance to the client's design. However, the works may include some elements of contractor designed civil, mechanical and electrical works. It is the most commonly used type of contract form

2.1.5.2 Design-Build Contract

This is recommended for the provision of both design and construction works by the contractor. Under this type of contract, the contractor designs and constructs, in accordance with the client's requirements which may include any combination of civil, mechanical, and/or electrical works.

2.1.5.3 EPC/Turnkey Contract

This may be suitable for the provision on a turnkey basis of a process or power plant, of a factory or similar facility, or of an infrastructure project or other type of development, where (i) a higher degree of certainty of final price and time is required, and (ii) the contractor takes total responsibility for the design and execution of the project, with little involvement of the client. Under turnkey projects, the contractor carries out all the Engineering, Procurement and Construction (EPC) activities, providing a fully equipped facility, ready for operational (at the "turn of the key"). It can be used for fast track project implementation with experienced contractors familiar with sophisticated risk management techniques.

2.1.5.4 EPCM or Partnering Contract

Under this contract, the contractor carries out all the Engineering, Procurement, Construction and Management activities including the operation and maintenance of the facility for specified period of time after project completion.

2.1.6 Contract Management

Contract management has developed into a separate discipline. The client's contract managers are involved at an early stage of project development to define what contract types and templates to use, given the background and technical complexity of the project. During project execution, they support their internal project leaders by following up the contractors' activities against what has been contractually agreed (John and Arjan, 2014).

Contract management is the process of actively managing contract implementation to ensure the efficient and effective delivery of the contracted outputs and/or outcomes. The main focus of contract management is on the activities that are undertaken during the contract execution/implementation phase, following the award of contract (downstream activities). However, the success of contract management is strongly influenced by upstream activities such as those undertaken during the procurement planning, choice of contract, and contractor selection phase.

John and Arjan (2014) also defined in their book contract management as the process that ensures that all parties to a contract fully meet their obligations, in order to satisfy the operational objectives of the contract and the strategic business goals of the customer. This definition refers to contract management as a process, which is aimed at successful and profitable project delivery. The definition also refers to the obligations from both parties, which should be fully met. Obviously, it is difficult to put all obligations in writing. As projects differ in terms of complexity; their outcome may be more or less predictable. Therefore, a good contract will allow for specific arrangements between the contract parties, when, during the course of project execution, circumstances may change. The third aspect is that a contract does not focus only on activities that are necessary to realize the project objectives. A good contract also takes into account the strategic business goals of the final customer (John and Arjan, 2014).

Managing contracts is important for the success of any procurement process. It is an issue of strategic importance to all parties involved (Pillai and Adavi, 2013).

According to agency theory, the divergence of interests between principal and agent can be mitigated by instituting proper contract management procedures and by monitoring activities to limit opportunistic actions (Mutua et al., 2014). Once a contract is signed, it has to be managed properly if the intended objectives are to be met. This involves formal governance of the contract

ensuring contractual requirements are delivered at the required level of quality, time and cost, while keeping the relationship between the contracting parties open and constructive.

Given the risks like proposal, liability, schedule, contractual, performance and price risks associated with contract management, rigorous contract monitoring and reviews are expected. Frequent reviews on contract management procedures and necessary improvements can bring out the benefits of contract management (Abi-Karam, 2001).

Effective contract management emerges as a crucial function to improve profitability, support compliance and manage risk. It becomes necessary that the contracting activities should be managed by effective team to avoid customer un-satisfaction, unwanted cost and time overruns. According to Kanchana (2018) the five determinants of effective contract management are allocation of resources, clear reporting lines, defining of roles and responsibilities, ensuring timely payments and managing risk.

2.1.7 Contract Management Plan

A contract management plan (CMP) is a useful tool for managing risks to the success of contracts, and for ensuring that what is negotiated as value for money is actually delivered. It provides a structured and systematic approach that important obligations are not overlooked and the objective of the contract is achieved (World Bank, 2018).

Good contract management plan is critical to effective program execution in the areas of risk management, performance based incentives, quality assurance, and changing mission priorities. It builds effective partnerships, establishes open communications, sets clear expectations, defines roles and responsibilities and sets the framework for mission success (DOE, 2012).

To support the contract start up and management, most of the work required for developing a contract management plan should be done before the contract is formed.

The contract management plan should be fit-for-purpose. This means that the level of detail and length of the document should be proportionate to the scope, value, risk, complexity and duration of the contract. While all stakeholders should contribute to the development of the contract management plan, the contract manager or team is typically responsible for its development. It should be shared with all parties involved in contract implementation, management, administration and governance to ensure that it is fully understood, especially the allocation of risks and responsibilities (World Bank, 2018).

According to World Bank, (2018), typically the contract management plan shall cover some, if not all of the following:

- The roles and responsibilities in contract management
- List of contacts of key personnel of the contracting parties
- Contract management system
- Contract documents including key contractual terms and conditions
- key milestones and contract deliverables including the critical path
- Key Performance Indicators (KPIs)
- Reporting requirements (types of reports, times, contents etc.) and lines of reporting
- Payment procedures consistent with contractual provisions
- Record keeping requirements and procedures
- Audit or independent assurance requirements
- Change management or contract variation procedures
- Issues management and escalation
- key contractual remedies
- Risk management plan
- Stakeholder engagement plan
- Communication plan
- Guarantees , securities and insurance coverage
- Price adjustment formula and circumstances
- Interface management (between the parties)
- Contract close out procedures

2.1.8 Stages of Contract Management Processes

The Asian Development Bank (2021) describes the contract management process from the perspective of the client, which comprises three stages: pre-contract award, contract administration, and contract closure. These stages follow a logical flow: the pre-contract award stage is the design phase of contract management during which the strategy is defined; the contract administration stage consists mainly in implementing the contract by performing a number of monitoring and control activities in interaction with the contractor, starting from contract award; and the contract closure phase aims at properly “exiting” the contract and

drawing lessons for future projects. Here contract “implementation” describes the contractor’s work within the contract and occurs concurrently with the client’s stage of contract administration (i.e., the client administers the contract while the contractor implements it).

According to John and Arjan (2014) different stages can be identified in the process of contract management, i.e. the pre-contractual stage, the contract-negotiation stage and the post-contractual stage. These three stages are interrelated: problems that will occur in the pre-contractual stage between contract partners may surface during project execution. Therefore, it is important to be aware of the full contracting cycle when engaging in a contract.

2.1.9 Contract Management Practices

Good contract management practices describe minimum standards of acceptable practices for contract management of public and private project works. Such practices are expected of all those parties involved in the management of the contract in order to achieve continuous improvement and best performance. These practices encourage high ethical standards in order to achieve better procurement practices, higher productivity, high-quality construction work, better working conditions, better value for money and the avoidance of malpractice, with significant benefits to the entire community.

The following elements are identified as good contract management practices. Most of them are common practices practically employed in the contract management of construction world.

2.1.9.1 Pre-Award Process

A number of activities must be performed by the client and prospective bidders before awarding the contract. These activities include contract type choice, determining the number of bidders, issuing Invitation to Bid letter, holding pre-bid meeting, preparing and distributing bid document, making site visit, qualification and selection of bidders, and issuing addenda. In this process the client also conducts a debriefing session to the bidders to explain how the bid evaluation and selection process are carried out.

2.1.9.2 Contract Management Start-Up

After a contract is awarded, there are a number of matters that should be addressed to provide the foundation for successful contract management. An early step is to understand both the contract provisions and contractual relationships during contract formation. If the

contract manager is involved in earlier contract management phases, the manager will already have knowledge of the issues relevant to implementation. For example, if the manager is involved in drafting the contract, he/she will have likely an understanding of its provisions. Another important activity is to do kick off meeting which is the event that formally announces the start of contract administration and the parties are get acquainted well with each other.

2.1.9.3 Contract Administration Team

It is equally important to confirm that sufficient resources and senior management support are available to manage the contract. In order to implement and manage the contract, competent contract administration team should be assigned. Moreover the contract manager or team must ensure that appropriate delegations and authorizations exist in line with client's requirements. Also the roles and responsibilities of the contract manager or team should be clearly defined.

2.1.9.4 Performance Monitoring and Reporting

Good contract managers incorporate reporting on contract activity into their regular reporting arrangements. This should involve the development of a number of contract performance indicators and the periodic measurement and reporting against them. This assists in reinforcing the importance of good contract practices and also provides assurance to senior management that the contracting is well monitored and measured against the provision of the contract, including its compliance with the policy and reporting requirements of the company (ANAO, 2012).

Performance management involves: performance monitoring-collecting data on performance; performance assessment-deciding whether performance meets the client's needs; and taking appropriate action-such as understanding and extending features of good performance, correcting areas of underperformance, or amending the contract requirements to meet changing needs. Performance management must be undertaken throughout the life of the contract and for all contracts, whether they are straightforward or complex. Along with performance indicators and standards, arrangements for monitoring and assessment should be set out and agreed in the contract and contract management plan, along with actions that would result from under performance. Clear links should be established in the contract between payments for performance and the effect of non-compliance or under performance on those payments, and the intent to invoke penalties contained in the contract if necessary.

The performance monitoring and assessment system should be reviewed at the contract start-up stage. Monitoring underpins assessment and they do not occur in isolation from one another. In practice, performance is assessed and feedback and reports are provided throughout the monitoring process.

2.1.9.5 Communication and Relationship

Good management of the contractor and client relationship underpins overall successful contract management. If the contract manager is new to the contractual arrangement, efforts should be made to understand the relationship that exists between them. A sound basis for the relationship should be established in the earlier contracting phases. It is particularly important to understand the background to the relationship and be aware of any problems or issues that arise at earlier stages of the contract management process. It is better practice for the client to adopt a structured approach to establish and maintain a constructive relationship and regular communication with the contractor. Providing positive and constructive feedback also assists in maintaining such a relationship. It is important to listen to the contractor, to identify any problems, address them promptly and explain decisions in an impartial way, carry out informal day-to-day discussions, interactions and formal meetings at pre-determined intervals with nominated personnel from each party. Relationships should be managed in a professional manner and be based on cooperation and mutual understanding, taking into account the need for probity and ethical behavior.

The type of contract, its size and duration as well as the culture of the parties and the personalities of the people involved influence the relationship.

2.1.9.6 Quality Control and Compliance

It is good practice to monitor and assess quality as the contract is being implemented. This ensures that quality is controlled and consistently delivered. There are many different types of quality management and control systems. It is important to select an appropriate system or methodology based on the nature of the contract. The system should be agreed with the contractor and put in place before the contract commences. The causes of poor quality are flaws in the design and specification, poor quality assurance tests or inspections and inferior materials being used (World Bank, 2018).

2.1.9.7 Contract Risks Management

Risks are possible occurrences, which, in the event they occur, have a negative effect on the success of a project. Risk management is the identification, analysis and quantification of risks, and the translation of these into systematic risk-mitigation plan, which allows for proper control, reporting and follow-up of the risks.

The best way to minimize risks is to have good Quality Assurance (QA) and Quality Control (QC) practices in place. Having redundancies in design, engineering, documentation, reports and records, and contract management is also helpful in mitigating the consequences of contract risks. Other options are measures aimed at minimizing, avoidance, insurance and transfer of risks. It is a wise policy for the client not to accept certain risks (John and Arjan, 2014).

2.1.9.8 Financial Management

Contract payments should only be made in accordance with the provisions of the contract, which should incorporate, where appropriate, company policy, rules and procedures for payments to services.

Payments should only be made when the contract manager is satisfied that the provisions have been fulfilled. Before payments are made, evidence is required that the works, goods and services are delivered and meet the required standard of performance or quality or following receipt of a correctly rendered invoice or other statement of expenditure or works done. All necessary authorizations and approvals should be obtained prior to making payment.

It is also important that payments for satisfactory performance are made in line with the time frames set out in the contract and they should not be delayed because this can undermine the relationship with the contractor.

2.1.9.9 Changes Control

A variation is an amendment to a contract that changes the original terms or conditions of the contract. Variations are usually to alter service, personnel or to change pricing. Provisions to allow and regulate contract variations should be a standard feature of all contracts. Variations should not be used to mask poor performance or serious underlying problems. The ability to vary the contract should be directed or controlled by the client and should only occur in defined

circumstances. It is accepted practice for the variation mechanism to provide for variations to be agreed between the client and the contractor in writing through a formal amendment of the contract. In some circumstances there is an interest to inadvertently amend a contract by oral agreement or conduct, even though there is a contract provision expressly requiring a formal process to be followed. It is therefore important that those involved in managing and administering the contract should not agree to informal contract amendments.

Changes to contractual arrangements have the potential to affect the scope and viability of the contract for either or both parties, and making substantive variations to a contract requires some of the actions and issues involved in developing the original contract. They should therefore be planned accordingly. The effect of variations on original timeframes, deliverables and value for money should be assessed. If the effects are significant, senior management and other stakeholders may need to be consulted and/or advised. The client should be alert to the risk that multiple changes made to a contract over a period of time may shift the overall allocation of contract risk or transfer particular risks to the client. It is important to analyze all consequences of a proposed contract amendment and to make sure there are no unintended effects of the change.

Another variation is the exercise of a contract option to extend the agreed terms for a further time period. An extension to the contract period can also be accompanied, for example, by a change in price, personnel, and/or services. Negotiations for contract extensions should commence and be agreed before the expiry date of the contract. Negotiations that start late can place the client in an inferior negotiating position. This is especially so if a contract is critical to the client's services since it shortens the time available to assess whether it still offers the best value for money. The reasons for the variation and their effects should be clearly documented.

2.1.9.10 Documentation and Record

Before the contract management phase, a system for maintaining documents for the particular contract should be established. If this is not the case, a recordkeeping system containing all appropriate documentation should be established in accordance with the client's record keeping policy and practices.

It is important that the most up-to-date version of the contract incorporates any variations and records of relevant decisions, meeting minutes, including approvals and authorizations, shall be

formally evidenced in writing and appropriately stored. This provides the basis for making payments, decisions and the ongoing management of the contract.

2.1.9.11 Claims and Dispute Resolution

In addition to the sound understanding by both the client and contractor of their contractual responsibilities and obligations, the relationship management should reduce the potential for disagreements and disputes to arise over the life cycle of the contract. As a general rule, a disagreement becomes a dispute when it is not possible for the parties to resolve it without resorting to a formal resolution mechanism. Many disagreements and disputes arise when the parties cannot agree on issues related to the interpretation of contract provisions, the definition of deliverables, meeting performance standards and/or the effect of unexpected events. These disagreements may be of a minor nature and can be readily resolved. It is important that any possibility of dispute or an actual dispute be recognized at an early stage and addressed as quickly as possible. Avoiding the escalation of disagreements can impact the contract deliverables and reduce the costs to both parties.

Generally, what a dispute is and when it occurs shall be defined in the contract, often in a dispute resolution clause. The forms of dispute resolution mechanism can include negotiation, arbitration, mediation, or litigation.

2.1.9.12 Contract Close Out

Contract closeout is one of important phases of contract management life cycle. Being the final phase of the project, efficient and effective management of contract closeout process ensures smooth transfer from project to end user. If contract closeout is not managed wisely, it will incur delays and unnecessary costs.

The construction projects are faced with lengthy and difficult contract closeout phases. This created delays, unnecessary administrative costs, dissatisfaction and tension between project parties and cash flow problems for smaller contractors and subcontractors and generally it has become a burden for project owner to close the projects in earliest time possible. It is recommended to consider closeout activities in the planning and scheduling phases with specific time duration and responsible body to minimize the closeout process duration (Mrozowski et al., 2008).

Another better practice for the contract manager to undertake after close out is to perform an evaluation of the overall performance and management of the contract. This evaluation can be very useful in understanding and improving overall contract management, improving contractor performance and can assist in future stakeholder decision-making. The evaluation should be undertaken at the end of all contracts and should be planned for in advance. It is better practice that the findings of any evaluation be analyzed to provide lessons learned to underpin both continuing and future contracting activity. Lessons learned should be documented and provided to the appropriate parties. Any manuals, plans or policies should be reviewed and updated accordingly.

2.1.10 Challenges of Contract Management

In the field of modern engineering projects, the parties to the contract do not pay much attention to the legal binding force in the contractual terms and conditions and there is a problem of weak awareness, which leads to some misunderstandings and unethical behaviors in the performance of the contract. Due to such conditions, the contract formulated may be seen unfair and brings challenges to one of them (Yihan, 2014).

Another challenge for contract management is the attitude towards contracting. John and Arjan (2014) stated in their book about contracting that contract management is similar to war games in that the contracting parties have different objectives and they will pursue their own self-interest, often at a cost to, and to the detriment of, the other party. The prevailing coordination mechanism for settling disputes and conflicts is negotiation even though most of the time, the contract parties are not 100% clear about their intentions, their commitments, plans and resources.

John and Arjan (2014) mentioned in their book problems that are faced in contract management to be: 1) Misalignment of objectives between client and contractor, 2) Lack of knowledge and expertise by the client 3) Too much involvement of engineering and other consultants, 4) Inefficient decision-making by the client 5) Frequent scope and planning changes request by the client 6) Misunderstanding of what is agreed between client and contractor, 7) Payment problems and 8) Local political pressure

The ADB, (2021) also lists the following challenges of contract management

- Misuse of advance payment by the contractor for purposes not related to the contract

- Delays in handing over of construction site to the contractor
- Resettlement issues or local disturbances at site
- Non-submission of work program by the contractor
- Delay in submission of insurance documents
- Late or non-submission of a quality assurance plan
- The whole contract is unofficially delegated to another unskilled contractor
- Use of unauthorized sub-contractors
- Delay in procurement of construction materials by the contractor due to non-availability of materials or a sudden increase in price of materials in the market
- Delay in mobilization of key personnel and equipment
- Poor quality or non-conformance of deliverables produced by contractor
- Lack of proper pre- or post-delivery inspection of goods
- Non or late payment by the contractor to subcontractors or material suppliers
- Non-compliance with environmental protection measures and safety rules
- Nonor late submission of technical test reports
- Lack or ineffective communication, and nonor late submission of monthly progress reports
- Variations and extension of time are granted without justification
- Disagreement on claims or rates of new items
- Incomplete or delayed submission/processing of contract variation requests
- Late processing of interim and final payments by the client
- Delay in defects correction
- Improper application of contractual-based termination provisions
- Delays in applying dispute resolution mechanism

2.2 Empirical Literature Review

Mutua,et al. (2014)found in their study that contract management practices and other factors collectively accounted for 66% variation in project performance. In their study contract management practices influenced project performance through contract type, acceptance criteria, and dispute resolution mechanism which were found to have a positive correlation with performance of the project.

Nsanzimana and Mulyungi(2018) investigated the level of construction project management practices in road construction projects in Kigali, Rwanda.Their study shows there is strong correlation between contract management practices such as contract negotiation, understanding the terms of contract and contract monitoring frequency and performance of the road construction project.

Ayalew, et al. (2018) assessed the performance and challenges of Ethiopian construction industry and found that the level of contract management practices adopted by the industry in terms of safety, risk, cost and time management to be very low and unsatisfactory. Accordingly, they found the amount of schedule slippage ranges between 61-80% and that of planned costs and other variables such as risk, quality, resources utilization and safety deviates in the range of 21-40% from the requirements planned or anticipated at the beginning.

Murat and Hesham (2020) have done critical assessment of construction contract administration practices for construction projects using fuzzy structural equation modeling by collecting data from 336 construction professionals worldwide and found the most important contract management practices to be 1) communication and relationship 2) performance monitoring and reporting and 3) documentation and recording system for efficient and effective contract administration.

Julius and Gershon (2019) investigated the level of construction project management practices in road construction projects in Ghana.Their study shows there is strong positive correlation between contract management practices such as competitive tendering, monitoring intensity, risk management, and evaluation and performance of road construction projects

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides full description about the research methodology that is used to carry out the research in relation to the study's objective. It specifies the research design, approach, respondents of the study, sampling technique, data collection methods and analysis tools.

3.2 Research Design

Since the objective of this study is to assess and describe the practices adopted and the challenges faced in contract management of construction projects, descriptive research design is found to be the most appropriate. Descriptive research is used to get the most factual and dependable information about the characteristics of a particular individual, entity or group of the study (Bryman and Bell,2011).

3.3 Research Approach

The approach of this study uses a mixed research which adopts both qualitative and quantitative research. Creswell (2014) argues that this “mixing” or blending of both types of approaches provides a stronger understanding of the problem or question than either type and this method of research has regained not just acceptability, but popularity, with a significant number of studies arguing its virtues in terms of greater understanding and/or validation of results.

3.4 Population of Study, Sampling Technique and Sample Size

As noted by Cohen et al., (2005) the methods of sampling arise directly out of the issue of defining the population on which the research will focus. Further, they stated that factors such as expense, time and accessibility frequently prevent researchers from gaining information from the whole population. Therefore they often need to be able to obtain data from a smaller group or subset of the total population in such a way that the knowledge gained is representative of the total population under study (Cohen et al., 2005).To undertake this study, the study selects contract administration heads, consultants, construction management professionals, resident engineers and senior members of the ECDSWCo as participants of the study who are in charge of or participating in the contract management of construction projects currently at different project sites which include buildings, transport roads and water construction works.

The sampling technique uses non probability with purposive sampling of the population. The reason for choosing non probability purposive sampling is that the selected population of the study is useful and relevant for the research instrument, purpose and the general objective of the study. There are 40 relevant professionals in the company that are associated with contract management of various construction projects supervised by the company and are selected for the participants of the study. Hence the sample size is 40 respondents.

3.5 Data Source, Collection and Analysis Method

The primary data are obtained from the responses of the participants to the self-administered questionnaires. Secondary data are sourced from the company's relevant documents, academics periodicals, research journals, government publications, books, past dissertations and internet resources. The questionnaires are delivered to the participants and collected in person.

Before analyzing the data, the data are first subjected for reliability and validity tests using appropriate statistical tools and finally it is subjected to descriptive statistics analysis in which case individual and composite mean scores and frequency percentages are used to describe the level of contract management practices used and challenges faced by the company. As for the qualitative data, which are collected from some open ended questions, sound conclusions are drawn from the perception and opinions of the respondents about contract management.

3.6. Research Instrument

For this research, the research instrument comprises questionnaires that are self-administered closed-ended/structured and some open-ended questions.

The questionnaires are developed from the essential concepts contained within the literature review. The questionnaires consist of four parts. The first part includes questions about general information on the project and demographic profiles of the respondents i.e. project name, project type, project complexity, project duration, project location, age, sex, educational level and professional work experience of the respondents. The second part of the questionnaires is about contract management practices which are adapted from factors that have effect on contract management from theoretical and empirical literatures. The questionnaires are closed ended and comprises 59 measurement items of contract management practices which are grouped into 12 groups and each item is rated by a five point Likert scale ranked from *strongly disagree* to

strongly agree. The third part of the questionnaire is closed ended dichotomous questions with *Yes/No* choices and comprises 27 measurement items concerning the current challenges facing the contract management. The fourth part of the questionnaires consists of general questions concerning general opinion about contract management in the organization and our country.

3.6.1 Mean Score Ranking

Mean scores are further interpreted back to reflect the average of the respondents' Likert scale rating converted to a continuous index, which then is split into discrete categories.

Table1. Mean Score Ranking

| Likert Scale | Likert Ranking | Mean Score Category |
|--------------|-------------------|---------------------|
| 1 | Strongly Disagree | 1.0-1.49 |
| 2 | Disagree | 1.5-2.49 |
| 3 | Neutral | 2.5-3.49 |
| 4 | Agree | 3.5-4.49 |
| 5 | Strongly Agree | 4.5-5.00 |

Source: (Moohammad, 2014)

3.7 Reliability and Validity

3.7.1 Reliability Test

Before going to analyze the data, initially the reliability of the contract management practices variables is checked. The reliability of a measure ensures consistent measurement across time and the various items in the instrument. In other words, the reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the goodness of a measure (Sekaran, 2003).

Consistency and reliability within the items of the questionnaire are measured using Cronbach's Alpha test. The Cronbach's Alpha values for the measurement items of the questionnaires are shown in Table 2 and from this table the Cronbach's Alpha coefficients for the contract management practices range from 0.699 to 0.853. Since for the measuring instrument to be reliable, its Cronbach's Alpha value should be minimum 0.70. Most of the values are above

0.70 except for two values which are 0.699. So the measuring instrument is almost turned out to be reliable.

Table 2 Reliability Statistics (Field survey, 2022)

| S/N | Contract Management Practices | No of Items | Cronbach's Alpha |
|-----|--------------------------------------|-------------|------------------|
| 1 | Pre-Award Process | 6 | 0.699 |
| 2 | Contract Management Start -Up | 6 | 0.725 |
| 3 | Contract Administration Team | 3 | 0.699 |
| 4 | Communication and Relationship | 5 | 0.763 |
| 5 | Quality Control and Compliance | 5 | 0.709 |
| 6 | Performance Monitoring and Reporting | 5 | 0.748 |
| 7 | Document and Record | 4 | 0.714 |
| 8 | Financial Management | 5 | 0.761 |
| 9 | Claims and Disputes Resolution | 5 | 0.702 |
| 10 | Contract RisksManagement | 5 | 0.746 |
| 11 | Changes Control | 3 | 0.853 |
| 12 | Contract Close Out | 7 | 0.728 |

3.7.2 Validity Test

Hair et al. (2014) identify validity as the extent to which a measure accurately represents what it is supposed to. Ensuring validity requires a thorough understanding of what is to be measured and making it as accurate and right as possible.

The questionnaire is developed on the basis of incorporating and integrating established research tools in the field of contract management. The validity of the contract management practices questionnaire as assessment tool is shown, for example, in the research by Murat and Hesham (2020) which used the questionnaire in their study about the critical assessment of construction contract administration practices. Moreover, most of the questionnaires are adapted from literatures by Nsanzimana and Mulyungi (2018), ADB (2021) and John & Arjan (2014) which proved the validity of the questionnaire.

3.8. Methods of Data Analysis

For the purpose of this study, the analysis of data is done using Statistical Package for the Social Sciences (SPSS, V24). The collected primary and other related data regarding demographics, contract management practices and challenges are coded and subjected to statistical analysis according to their types.

3.8.1 Descriptive Statistics

Descriptive statistics such as mean, standard deviation, frequency percentage and distributions are used to describe the research sample data.

3.9. Ethical Considerations

Ethical concerns emerge as you design and plan your research, seek access to organizations and individuals and collect, analyze, manage and report your data. In the context of research, ethics refers to the standards of behavior that guide your conduct in relation to the rights of those who become the subject of your work, or are affected by it (Saunders et al, 2016). The ethical issues to be considered are the same in quantitative and qualitative research. Ethical issues in research relate to research participants, researchers and sponsoring organizations. Therefore, the researcher informs the participants about the purpose of the study and maintains the participants' privacy, dignity and keeping confidentiality and confirms that the collected data are used only for the purpose of this study.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents data analysis and interpretation of the results of the data obtained from the questionnaires survey distributed to the professionals of ECDSWCo who are involved in the contract management of projects supervised by the company. First the collected data are rearranged and coded in order to become complete data that are needed for the analysis. Statistical procedures are used to examine the obtained data from the questionnaires in accordance with the research's overall objective, using SPSS version 24 software. Descriptive statistics such as mean, frequency, standard deviation and percentage are employed to describe and interpret the results. The demographic profile of the respondents is discussed in the first part. Next mean scores with standard deviations are computed to describe the level of each contract management practice exercised by the company the rating of which is determined using the questionnaire (see annex I) which comprises Likert scale in five levels. Following this section, the presence or absence of challenges faced by the company is determined using dichotomous questionnaire with YES or NO answer from which frequency and percentage values are computed. The final part concerns and discusses answers that are obtained from open and close ended questions about some general issues of contract management practices in the company and in Ethiopia.

4.2 Response Rate

A total of 40 questionnaires are distributed in person to relevant professionals who work at five branches of ECDSWCo in Addis Ababa. Out of the collected questionnaires, thirty one (31) are filled properly and the rest are found to be incomplete. As a result, the overall response rate is 77.5 % and is subjected for data analysis and discussion of the study.

4.3 Demographics of the Respondents

The demographic data of the respondents collected for this study are gender, age, educational level, profession and years of work experience

Table 3. Gender of the respondents (Field survey, 2022)

| Gender | Frequency | Percent |
|---------------|------------------|----------------|
| Male | 28 | 90.3 |
| Female | 3 | 9.7 |
| Total | 31 | 100.0 |

Table 4. Ages of the respondents (Field survey, 2022)

| Age in years | Frequency | Percent |
|---------------------|------------------|----------------|
| 25-34 | 20 | 64.5 |
| 35-44 | 9 | 29.0 |
| 45-54 | 2 | 6.5 |
| Total | 31 | 100.0 |

Table 5. Educational level of the respondents (Field survey, 2022)

| Educational level | Frequency | Percent |
|--------------------------|------------------|----------------|
| B.Sc degree | 7 | 22.6 |
| M.Sc degree | 24 | 77.4 |
| Total | 31 | 100.0 |

Table 6. Profession of the respondents (Field survey, 2022)

| Profession | Frequency | Percent |
|-------------------------|------------------|----------------|
| Civil engineer | 23 | 74.2 |
| Architect | 1 | 3.2 |
| Construction management | 6 | 19.4 |
| Geological engineer | 1 | 3.2 |
| Total | 31 | 100.0 |

Table 7. Relevant experience of the respondents (Field survey, 2022)

| Experience in years | Frequency | Percent |
|----------------------------|------------------|----------------|
| >15 | 2 | 6.5 |
| 11-15 | 7 | 22.6 |
| 6-10 | 10 | 32.2 |
| 3-5 | 10 | 32.2 |
| < 3 | 2 | 6.5 |
| Total | 31 | 100 |

Table 3 shows that 90.3 % of the respondents are male and 9.7% are female. This indicates that most of the professionals are male.

The age distribution shows that 64.5 % are between 25 and 34 years old, 29.0 % are between 35 and 44 years old, and 6.5 % are between 45 and 54 years old as shown in Table 4 which indicates that young professionals are mostly employed.

Educationally, 22.6 % have a first degree and 77.4 % have a second degree as shown in Table 5. Most of them have second degree educational level.

Professionally, 74.2 % are civil engineers, 3.2 % are architects, 19.4 % are graduated in construction management and 3.2 % are geological engineers as indicated in Table 6. Most of them are civil engineers.

Regarding years of relevant work experience in contract management, 6.5 % have above 15 years, 22.6 % have 11 to 15 years, 32.3 % have 6 to 10 years, 32.3 % have 3-5 years and 6.5 % have below 3 years of work experience as shown in Table 7. This shows that most of the respondents have at least 6 years of work experience.

4.4 Assessment of Contract Management Practices

The study items in this research are contract management practices which are grouped as pre-award process, contract start-up, contract administration team, communication and relationship, quality and compliance, performance monitoring and reporting, document and record, financial, claims and disputes resolution, contract risk , changes control and contract close out management.

From the literature review of these practice groups (see annex 1), the pre-award process, the contract start-up , the contract administration team, the communication and relationship, the quality and compliance , the performance monitoring and reporting , the document and record, the financial, the claims and disputes resolution, the contract risk , the changes control and the contract close have each six, six , three, five , five, five, four , five , five, five, three and seven practice items respectively. The mean score of each practice in each group and the composite mean score of each practice group are computed in order to make to assess and determine the degree of their application by the respondents in managing contracts. For ranking and interpretation of the mean scores, Table 1 is used which shows mean scores ranking based on the study by (Moohammad, 2014).

The following are the results and interpretations of the computed values of the individual and composite mean scores of the practices.

4.4.1 Pre-award Process

Table 8.Pre-award Process(Field survey, 2022)

| S/N | Pre-award Process Practices | Mean | S.D. |
|-----|--|---------------|---------------|
| 1 | Is a pre-bid conference conducted to ensure all prospective bidders have a clear common understanding of the technical requirements and scope of work of the project | 2.6129 | .66720 |
| 2 | Does your organization use evaluation criteria, evaluation standards, and a weighting system to evaluate bidder's proposals | 3.7742 | .49730 |
| 3 | Does your evaluation much focus on project management and technical capabilities of the bidders | 3.9677 | .75206 |
| 4 | Is consideration made on contractor's past performance on previously awarded contracts in evaluating proposals | 4.0645 | .67997 |
| 5 | Does your organization conduct a pre-award survey on the potential contractor to verify the contractor's technical, managerial and financial capability | 2.7419 | .63075 |
| 6 | Does your organization provide debriefings to the successful as well as unsuccessful contractors after evaluation result | 4.0968 | .59749 |
| | Composite mean score | 3.5430 | .40590 |

The results of Table 8 show that the pre-award process exhibits a composite mean score of 3.5430 out of 5 indicating the respondents agree that this practice is exercised by the company. Within these practices, both pre-bid conference before bid floating and surveying on the potential contractor before contract practices have mean score of 2.6129 and 2.7419 respectively which shows the respondents are not sure whether these practices are carried out. From the values of other mean scores which are above 3.5000, the company conducts the practices such as considering evaluation criteria, standards, a weighting system and managerial and technical

capabilities of the bidders during evaluation. Moreover it conducts debriefings to the bidders after evaluation result.

4.4.2 Contract Start-Up

Table 9. Contract Start-Up (Field survey, 2022)

| S/N | Contract Start-Up Practices | Mean | S.D. |
|-----|---|---------------|---------------|
| 1 | Are the standard form, conditions and terms of the contract clear to both client and contractor before signing the contract | 3.8065 | .70329 |
| 2 | Do you perform project kick off meeting | 3.9032 | .65089 |
| 3 | Does the contractor provide work, environmental & safety rules plans | 3.4516 | .85005 |
| 4 | Do you review contractor's key personnel and manpower plan | 3.7742 | .56034 |
| 5 | Do you review sub contractor's qualification and experience | 2.7742 | .56034 |
| 6 | Do you make sure that the contractor submits contract securities and insurance coverage | 3.8387 | .45437 |
| | Composite mean score | 3.5914 | .41686 |

Table 9 shows the composite mean score of 3.5914 which shows that most of the practices under this group are exercised by the company such as making clear the contract document terms and conditions, performing project kick-off meeting, reviewing the manpower of the main contractor and making sure the submission of work, environmental, safety rules plans, securities and insurance coverage by the contractor. But the respondents reply that they do not review the subcontractors' qualification and experience.

4.4.3 Contract Administration Team

Table 10. Contract Administration Team (Field survey, 2022)

| S/N | Contract Administration Team Practices | Mean | S.D. |
|-----|--|---------------|---------------|
| 1 | Is competent contract administration team assigned | 3.6774 | .59928 |
| 2 | Are the roles and responsibilities of the team clearly defined | 3.6129 | .76059 |
| 3 | Do you carry out regular assessment of the team's performances | 2.8710 | .61870 |
| | Composite mean score | 3.3871 | .52421 |

The mean scores in Table 10 show that competent contract administration team with clear roles and responsibilities are assigned even though the composite mean score exhibits a value of

3.3871. It is not sure that whether the company conducts an assessment of the assigned team performances regularly as the mean score of this practice shows a value of 2.8710.

4.4.4 Communication and Relationship

Table11. Communication and Relationship (Field survey, 2022)

| S/N | Communication and Relationship Practices | Mean | S.D. |
|-----|--|---------------|---------------|
| 1 | Is there stakeholders' communication plan | 2.8710 | .67042 |
| 2 | Do you properly manage the interface between the client, the consultant and the contractor | 2.9355 | .72735 |
| 3 | Is there timely and proper management for queries and issues raised by the contractor | 3.8065 | .79244 |
| 4 | Do you conduct regular meetings between the parties | 3.5484 | .76762 |
| 5 | Do you implement clear and effective communication | 2.9677 | .70635 |
| | Composite mean score | 3.2258 | .52597 |

The results of table 11 show that the communication and relationship practice has a composite mean score of 3.2258 out of 5 which indicates that it is not sure that whether the company performs good communication and relationship fully with the contractor during contract administration. But it is agreed that some of the practices are carried out such as addressing issues raised by contractor and conducting regular meetings between the parties. From the mean scores of 2.8710, 2.9355 and 2.9677 respectively, the respondents are not sure if the company has stakeholders' communication plan, interface management and clear and effective communications between the parties.

4.4.5 Quality Control and Compliance

Table12. Quality and Compliance (Field survey, 2022)

| S/N | Quality Control and Compliance Practices | Mean | S.D. |
|-----|--|---------------|---------------|
| 1 | Do you make auditing of the contractor's Quality Management System (QMS) | 2.8065 | .74919 |
| 2 | Do you review timely construction materials quality assurance certificates, test reports and shop drawings | 3.6452 | .60819 |
| 3 | Do you carry out timely inspection of the work's quality | 3.7742 | .42502 |
| 4 | Do you control non compliance of works and track corrective actions | 3.8387 | .37388 |
| 5 | Do you manage construction designs and design developments for the designs done other than your company | 3.8710 | .80589 |
| | Composite mean score | 3.5014 | .41200 |

The results of Table 12 show that the Quality Control and Compliance practices has a composite mean score of 3.5014 out of 5 which indicates that the company fully applies quality control practices such as reviewing construction designs by outside consultants and inspecting quality of construction materials , shop drawings , work quality, non-compliance works by the contractor and recommending accordingly corrective measures as it is evident from the mean score values of such practices ranging from 3.6452 to 3.8710. But the respondents are not sure if they audit the Quality Management System (QMS) of the contractor's firm.

4.4.6 Performance Monitoring and Reporting

Table13. Performance Monitoring and Reporting (Field survey, 2022)

| S/N | Performance Monitoring and Reporting Practices | Mean | S.D. |
|-----|---|---------------|---------------|
| 1 | Is there project monitoring and reporting system | 3.9355 | .62905 |
| 2 | Are regular progress reports produced and reported to relevant stakeholders | 3.7419 | .68155 |
| 3 | Do you report major issues on time and have them addressed | 3.8710 | .71842 |
| 4 | Is there mechanism to monitor contractor's resources , care of Work and relationships | 2.6129 | .49514 |
| 5 | Do you notify the contractor on obligation failure and recovery schedule | 3.9355 | .62905 |
| | Composite mean score | 3.6194 | .44827 |

The results of Table 13 show that the performance monitoring and reporting practices have a composite mean score of 3.6194 out of 5 which indicates that the company performs monitoring and reporting activities such as regular monitoring and reporting of work progress, addressing major issues on time , keeping relevant stakeholders informed about the progress and notifying the contractor for under performances and their corrective measures as it is shown from the mean score values of such practices to be 3.9355, 3.7419, 3.8710 and 3.9355 respectively. On the other hand, the respondents are not sure if their company has the mechanism to monitor the contractor's resource capability.

4.4.7 Document and Record

Table14. Document and Record (Field survey, 2022)

| S/N | Document and Record Practices | Mean | S.D. |
|-----|--|---------------|---------------|
| 1 | Is there established documentation system for contract management | 3.8387 | .73470 |
| 2 | Do you maintain documents on time with registers | 3.8710 | .61870 |
| 3 | Are your documentation and records supported by information technology | 3.8387 | .82044 |
| 4 | Do you provide stakeholders with relevant, accurate and timely statistics and information when requested | 2.7097 | .69251 |
| | Composite mean score | 3.5645 | .52824 |

The results of Table 14 show that the documentation and recording practices have a composite mean score of 3.5645 out of 5 and most of the activities have mean score of 3.8 minimum which indicates that the company has got documentation system fully supported with information technology facility performing recording activities such as registering and keeping every document with references in proper places, but it is not certain that relevant stakeholders get the required and accurate information when requested as such practice shows a mean score of 2.7097.

4.4.8 Financial Management

Table15. Financial (Field survey, 2022)

| S/N | Financial Management Practices | Mean | S.D. |
|-----|---|---------------|---------------|
| 1 | Is there established financial system for payment process | 3.6774 | .47519 |
| 2 | Do you notify the client and certify due payment on time | 3.7097 | .52874 |
| 3 | Does the client effect payment on time to the contractor | 2.5161 | .76902 |
| 4 | Do you advice the client for contingency plan/additional funds | 3.0323 | .65746 |
| 5 | Is there penalty payment effected to the contractor for late payment or to the client for late work | 3.0968 | .70023 |
| | Composite mean score | 3.2065 | .45456 |

The results of Table 15 show that the financial practices have a composite mean score of 3.2065 out of 5 which shows that the respondents are not sure that whether payment related activities are carried out according to the contract. From the mean score values shown, the clients have established financial system, policies and rules for payment process. But they do not effect interim and final payments to the contractor on time even though the payment certificates are processed and

certified on time by the consultant. Also the respondents are not sure that penalties for late payment by the client or late work by the contractor are implemented fully according to the contract. Moreover it is not certain that if they advise the client to include contingency plan or reserve fund in the project budget plan.

4.4.9 Claims and Disputes Resolution

Table 16. Claims and Disputes Resolution (Field survey, 2022)

| S/N | Claims and Disputes Resolution Practices | Mean | S.D. |
|-----|--|---------------|---------------|
| 1 | Is there established claims and disputes resolution mechanism | 3.6774 | .54081 |
| 2 | Do you notify and assess timely client's claims to the contractor or vice versa | 3.6452 | .55066 |
| 3 | Do you effectively negotiate claims with the contractor | 3.5484 | .50588 |
| 4 | Do you support the parties for alternative dispute resolutions | 3.5484 | .56796 |
| 5 | Do you represent the client in dispute resolution and legally support during court cases | 3.4194 | .56416 |
| | Composite mean score | 3.5677 | .36913 |

Table 16 shows that the claims and disputes resolution mechanism have a composite mean score of 3.5677 out of 5 which is above the neutral rank value. Most of these practices in this group are performed including notifying, assessing and negotiating on time the claims forwarded by the client or the contractor for resolution. Moreover the company supports the parties for any dispute to be resolved in alternate disputes resolution or better way but it is not certain whether it represents legally the client in legal cases for any dispute forwarded to the court body.

4.4.10 Contract Risks Management

Table 17. Contract Risks (Field survey, 2022)

| S/N | Contract Risks Management Practices | Mean | S.D. |
|-----|---|---------------|---------------|
| 1 | Is there contract risks management system | 3.4194 | .62044 |
| 2 | Are contract risks assessed periodically | 2.6774 | .47519 |
| 3 | Is there responsible body assigned for managing contract risks | 2.6774 | .47519 |
| 4 | Do you support the client for design risks for the designs done by others than your company | 3.6452 | .66073 |
| 5 | Do you monitor the contractor's financial status and bankruptcy potential regularly | 2.8387 | .58291 |
| | Composite mean score | 3.0516 | .39989 |

The results of Table 17 show that most of the contract risk practices have below mean score of 3.50. It is not certain that whether the company has contract risks management system in order to analyze and manage potential risks that may occur during the construction activities. More over potential risks are not assessed periodically and there is no specific body assigned to manage such risks. Even the contractor's financial status and bankruptcy potential are not monitored regularly whether he/she is financially capable to deliver the project. On the other hand the company supports the client in reviewing the construction designs before construction commences thereby avoiding proactively the risks that may occur due to design flaws. To summarize, the above results show that there is gap in the company's management of contract risks as the composite mean score shows a value of 3.0516.

4.4.11 Change Control

Table 18. Change Control (Field survey, 2022)

| S/N | Change Control Practices | Mean | S.D. |
|-----|---|--------|--------|
| 1 | Is there changes/variations control management system | 3.7742 | .61696 |
| 2 | Are change/variation orders processed on time | 3.9032 | .70023 |
| 3 | Is information required for the varied work properly assessed | 3.8065 | .60107 |
| | Composite mean score | 3.8280 | .56353 |

The results of Table 18 show that all practices of the changes/variations control management have a mean score including the composite score of above 3.700 values. This shows that the company has changes/variations control system which properly assesses, controls and manages the changes' or variations' order with sufficient data when the orders are requested by the contractor or the client.

4.4.12 Contract Close Out

Table 19. Contracts Close Out (Field survey, 2022)

| S/N | Contract Close Out Practices | Mean | S.D. |
|-----|---|--------|--------|
| 1 | Are there proper contract closeout procedures | 3.9032 | .70023 |
| 2 | Are outstanding issues, claims or disputes resolved during closeout | 3.9032 | .74632 |
| 3 | Are provisional acceptance certificates issued timely up on physical works completion | 2.9355 | .67997 |
| 4 | Do you detect defects & notify the contractor within appropriate time | 3.9032 | .83086 |

| | | | |
|---|---|---------------|---------------|
| 5 | Do you follow up rectification works for defects after provisional acceptance | 2.3871 | 1.11587 |
| 6 | Do you release retentions and process the final payment within appropriate time | 2.5806 | .80723 |
| 7 | Do you document lessons learned and best practices upon completion of the project | 2.2903 | 1.07062 |
| | Composite mean score | 3.1290 | .53370 |

The results of Table19 show that the contracts close out practices have a composite mean score of 3.1290 out of 5 which is a neutral value. Some of the contract's closes out practices have got a mean score of minimum value of 3.9032 which shows they are exercised by the company. These include having contract close out procedures, resolving outstanding issues, claims or disputes and detecting defects & notifying the contractor for their correction within appropriate time before closingout. But the provisional acceptance certificates, retentions and final payments are not issued to the contractor within appropriate time. Another gap shown in the respondents is that there is no follow up after provisional acceptance and no record keeping and documenting practices for lessons and best practices learned from the project.

4.5 Assessment of the Contract Management Challenges

Table 20.Contract Management Challenges (Field survey, 2022)

| S/N | Major Challenges of Contract Management | Frequency | | Percentage | |
|-----|--|-----------|----|------------|------|
| | | Yes | No | Yes | No |
| 1 | Poor developmentof design/scope of work/specification | 22 | 9 | 71.0 | 29.0 |
| 2 | Misunderstanding of contractual clauses, condition and terms | 24 | 7 | 77.4 | 22.6 |
| 3 | Misuse of advance payment by the contractor for purposes not related to the contract | 23 | 8 | 74.2 | 25.8 |
| 4 | Delays in handing over possession of construction site to the contractor | 24 | 7 | 77.4 | 22.6 |
| 5 | Resettlement issues or local disturbances at construction site | 8 | 23 | 25.8 | 74.2 |
| 6 | Delay in submission of securities , guarantees and insurance by the contractor | 8 | 23 | 25.8 | 74.2 |
| 7 | Late or non-submission of a quality assurance plan by the contractor | 26 | 5 | 83.8 | 16.2 |
| 8 | Late or non-submission of work program by the contractor | 10 | 21 | 32.3 | 67.7 |

| S/N | Major Challenges of Contract Management | Frequency | | Percentage | |
|-----|---|-----------|----|------------|------|
| | | Yes | No | Yes | No |
| 9 | Unofficial delegation of the whole contract to another contractor who has no capacity to manage the contract | 3 | 28 | 9.7 | 90.3 |
| 10 | Use of unauthorized sub-contractors by the contractor | 6 | 25 | 19.4 | 80.6 |
| 11 | Delay in procurement of construction materials by the Contractor due to non-availability or a sudden increase in price of materials in the market | 24 | 7 | 77.4 | 22.6 |
| 12 | Delay in mobilization of contractor's key personnel and equipment | 24 | 7 | 77.4 | 22.6 |
| 13 | Poor quality or non-conformance of the works by contractor | 11 | 20 | 35.5 | 64.5 |
| 14 | Lack of proper inspection and control of materials and work output | 7 | 24 | 22.6 | 77.4 |
| 15 | Non-payment by contractors to subcontractors or material suppliers | 24 | 7 | 77.4 | 22.6 |
| 16 | Non-compliance with local environmental protection measures and safety rules | 24 | 7 | 77.4 | 22.6 |
| 17 | Non-submission of construction materials test reports or quality certificate | 9 | 22 | 29.0 | 71.0 |
| 18 | Lack or delay of funding by the client to the project | 26 | 5 | 83.8 | 16.2 |
| 19 | Lack of communication and late/non-submission of progress reports | 24 | 7 | 77.4 | 22.6 |
| 20 | Work variations and extension of time are granted without justification | 6 | 25 | 19.4 | 80.6 |
| 21 | Disagreement on claims on extension time , additional payment or on rates of new construction materials | 15 | 16 | 48.4 | 51.6 |
| 22 | Incomplete or delayed submission/processing of contract variation requests | 24 | 7 | 77.4 | 22.6 |
| 23 | Late processing of interim and final payments by the client to the contractor | 29 | 2 | 93.5 | 6.5 |
| 24 | Delay in defects notification and correction works | 24 | 7 | 77.4 | 22.6 |
| 25 | Improper application of contractual-based suspension or termination provisions | 9 | 22 | 29.0 | 71.0 |
| 26 | Delays in applying dispute resolution mechanism | 25 | 6 | 80.6 | 19.4 |
| 27 | Delays in contract close out activities | 29 | 2 | 93.5 | 6.5 |

As it is shown from the above table, most of challenges listed in the study are faced by the contract management. The challenges or problems faced are listed below in their rank of the percentage of response.

- Delays in contract close out activities (93.5 %)
- Late processing of interim and final payments to the contractor (93.5%)
- Late or non-submission of a quality assurance plan by the contractor (83.8 %)
- Lack or delay of funding by the client to the project (83.8 %)
- Delays in applying dispute resolution mechanism (80.6 %)
- Misunderstanding of contractual clauses, condition and terms (77.4 %)
- Delays in handing over of the construction site to the contractor (77.4 %)
- Delay in materials supply due to non-availability or high price in the market (77.4 %)
- Delay in mobilization of contractor's key personnel and equipment (77.4 %)
- Delay or non-payment to subcontractors or material suppliers by the contractor (77.4 %)
- Non-compliance with local environmental protection measures and safety rules (77.4 %)
- Lack of communication and late/non-submission of progress reports (77.4 %)
- Incomplete or late submission/processing of contract variation requests (77.4%)
- Delay in defects notification and correction works (77.4 %)
- Misuse of advance payment by the contractor for purposes not related to the contract (74.2%)
- Poor development of design/scope of work/specification (71.0 %)

Out of these 16 faced challenges, six challenges are attributable to the contractor, the other six are due to the contract management team and the rest are due to the client.

The respondents give also some replies for the close and open ended questions regarding the general conditions of the contract management practices in their company in particular and in Ethiopia in general.

- Most reply that even though most of the contract administration practices practiced by their organization meet acceptable standards, the practices that are used in Ethiopia are not competent generally.

- They also state that some of terms, conditions, concepts and ideas in the General Conditions of Contract of Constructions (GCCC) of Ethiopia are not usually understood by the contracting parties especially by the client.
- Their company does not have contract management plan (CMP) before starting contract management process.
- From their replies, it is found out that poor contract management practices have high impact on time, medium impact on cost and less impact on quality of the project work
- Most say that another challenge to the contract management is the suspension or premature termination of contract due to weak financial position or bankruptcy shown on the contractor
- Their company does not conduct regular training programs specifically on contract management practices
- From the replies, the problems that hinder much greatly to apply good contract management practices are poor communication and relationships in particular and the failure of both parties to carry out their responsibilities and obligations fully according to the contracts in general.

CHAPTER 5: CONCLUSION AND RECOMMENDATION

In this section the main findings of the research are summarized and conclusions are made and recommendations are given based on the research findings. Finally, limitation of the study and some suggestions for further study are also indicated.

5.1 Summary of Findings

This study examines the current practices and the challenges faced in contract management of construction projects supervised by ECDSWCo's in Ethiopia. The study is conducted using descriptive survey method. Before statistical analyses, first the reliability and validity of the measuring instrument are checked to confirm the stability, consistence and the strength of degree of relationship among the questionnaire items.

Based on the results of the statistical analyses, the following summaries of the findings are drawn.

The contract management practices are grouped in 12 categories which comprise 59 practices in total. Most of the contract management practices exercised by the company are found to be fairly satisfactory but some of them are not applied fully.

Out of the 59 listed practices, the company is found to be conducting 39 practices with varying degree of application while 13 practices which are said by the respondents that they are not sure whether these practices are carried out. The remaining 7 practices are not carried out completely. So to be certain, it can be said that only 39 practices are implemented by the company.

Out of the 27 listed common challenges/problems, the company faces 16 of them during contract management period.

5.2 Conclusion

The first findings of the study (descriptive analysis) shows that the mean scores of most contract management practices have a mean score of above 3.50 which indicates the respondents feel that these practices are exercised by the contract management team of their company when managing the contracts.

But the following need much attention for their full implementation.

In the Pre-Award Process group, before bidding, all potential bidders are not briefed on the technical requirements and scope of work of the project. In addition before awarding the contract

to the winner bidder, physical survey is not made to verify the winner bidder's technical, managerial and financial capability.

As for the assigned Contract Management Team, the respondents are not sure whether their company evaluates the job performances of the team regularly for the assigned project site

Out of Communication and Relationship management practices, the respondents are not sure whether they have stakeholders' communication plan, clear and effective communications and management of the interface between the parties.

In the Quality Control and Compliance activities, auditing is not made on the Quality Management System (QMS) of the contractor's firm before awarding the contract and during project implementation to ascertain that the contractor employs quality system

During Performance Monitoring and Reporting activities, there is no mechanism adopted by the contract management team to monitor the contractor's resources, care of work and proper relationships in order to ascertain that the contractor's performances are according to the required ones.

Even though the company established Documentation System for contract management, relevant stakeholders do not get relevant, accurate and timely information about the progress of the project when it is required.

Regarding Financial Management, payment is not usually effected on time to the contractor though all necessary payment process and certification are completed before final approval. Moreover the client is not advised to consider contingency fund for variation work or emergency situations that may occur during project execution. Penalties are also not imposed usually on the defaulting party even though provisions for penalties are stipulated in the contract.

As for the Claims and Disputes Resolution practices, the respondents are not sure whether their company supports the client in legal cases in court when disputes are forwarded to the court for resolution.

Regarding Managing Contract Risks, the contract management team has no contract risks management system in which contract risks are not assessed periodically, responsible body is not assigned and no mechanism installed to monitor regularly the contractor's financial status and bankruptcy potential

Looking into the Contract Close Out practices, contracts are not closed on time due to the following reasons.

1. Delayed issuance of provisional acceptance certificates up on work completion
2. Lack of serious follow up of rectification works after provisional acceptance is made
3. Delayed process of the final payment and release of retentions

Finally another gap shown from the study is that the contract management team does not document lessons learned and best practices from the project to help for future decision making.

Concerning the challenges faced by the contract management team, the following 11 challenges are ranked in their order of the percentage values of response by the respondents and most are attributable to the client or contractor

Late payments to the contractor: This problem is observed in most governmental projects due to the nature and long procedures of payment process. Also there are late approvals by the client or contract manager or consultants when payment certificates are presented on time. This causes frustration on the contractors

Submission of a quality assurance plan: Most local contractors do not introduce Quality Management System (QMS) in their company so that they do not submit good quality assurance plan for management of their projects.

Lack or delay of project funding: This problem is obvious in governmental projects due to late approval of project budgets by various stakeholders before or during project implementation. Most reasons are late release of bank loans and late or unwillingness of concerned officials to approve the budget.

Delays in applying dispute resolution mechanism: When disputes arise the parties overlook the disputes and do not act early for their resolution as stipulated in the contract document until the disputes became critical and reached to the level of conflict. Disputes should be resolved immediately through discussions and negotiation when they occur (John and Arjan, 2014).

Misunderstanding of contract: Some contractual clauses, condition and terms are found to be unclear especially to the client side.

Handover of the site: Due to various reasons, construction sites are not handed over to the contractor on time causing late commencement of the construction.

Delay in materials supply. This is obvious due to the non-availability or high price in the market of construction materials as a result of COVID pandemic and current market situations

Delay in mobilization: Some contractors take much time to mobilize their key personnel and equipment to the site after the site is handed over to them.

Non-compliance with local rules: Most contractors do not comply with the rules of local authorities for site environmental protection and safety measures.

Communication and progress reports submission problems: Effective and clear communications are not exercised between the parties. Moreover progress reports are not submitted on time by the contractors.

Misuse of advance payment: Some contractors use the advance payment paid to them for other purposes not related to the contract.

5.3 Recommendations

In this paper the researcher presents recommendations for better contract management of construction project. One of the critical success factors for construction project is the effective and efficient management of contracts. To do so, good contract management practices are essential. Based on the results of the study and from literature review, the following practices are recommended for their implementation by the contract management teams of the company in their day to day management of contracts in order to achieve the project success.

Out of the 12 groups of contract management practices presented on this study, the company should focus primarily on the Communication and Relationship, Performance Monitoring and Reporting, Documentation and Recording, and Managing Contract Risks activities. These practices are the most important ones which have greater impact on the project success (Murat and Hesham, 2020).

Good communication and relationship plays vital role for smooth and effective contract management processes. The communication and relationship management shall be dedicated to keeping the relationship between the two parties' open and constructive, resolving or easing tensions and identifying problems early. This involves open communication, information sharing and appreciating of each other's business in a professional manner (Thomas, 2015).

The performance monitoring and reporting should be regular and rigorous to ascertain that construction activities are carried out as planned. Reporting should be timely and accurate.

The contract management team/consultant should implement contract risks management system which plans, assesses, quantifies, assigns and mitigates various types of potential risks that may

occur during construction. Proactively acting on the risks saves costs for both the client and contractor and avoids project delays (Banaitiene and Banaitis, 2012). Depending on the complexity of the construction projects, risk management body should be established or assigned to manage the risks (PMI). From the challenges faced in our country, the financial positions of the contractor should be monitored regularly and if necessary financial reports should also be submitted by the contractor in order to check the contractor for threat of potential bankruptcy.

During bidding process, the contract management teams should carry out sessions for potential bidders about the nature and scope of work, expected project completion time and brief descriptions of the condition and type of the contract that will be entered. This will avoid the ambiguity or misunderstanding created in the bid proposals submitted by the bidders (John and Arjan, 2014). Before awarding the work to the contractor, physical assessments are also required on the contractor's technical, managerial and financial capabilities in order to check the fitness of the contractor for the work.

The contract management teams should review and audit the contractor firm whether it is implementing Quality Management System before awarding the contract and during construction phase (PMI). This practice motivates and obliges the contractor to get used to apply quality works in all aspects of work methods, procedures and activities.

One of the major problems observed in contract management in our country is the practice of not paying the contractor on time for the works done. Nowadays this practice became a norm rather than a problem and contractors are complaining all the time about this practice. Unless the contractor is paid on time, he/she will not continue the next work which will create unnecessary delays in the project and bad relationship among the parties. So this practice should be avoided as much as possible and the contract management team by consulting with the client should make sure that payments are effected without delay or else penalties for late payment should be enforced according to the contractual terms and clauses.

During project executions many work variations arise mostly due to new or additional demands by the client or design problems. Also unexpected risks may occur which require additional financing. Therefore, the contract management team/consultant should advise or include in the projects' budget plans sufficient contingency or additional fund to compensate for such variations or risks. Failure to do such practices may result in project termination, disputes, cost overruns or delays.

When disputes arise, it is better practice to resolve them through negotiations or if not use alternative dispute resolution methods (John and Arjan, 2014).

Another contract management problem which needs due attention is contract closing out. This has become normal rather than a problem in our country. This problem has caused unnecessary overhead costs and dissatisfactions from project stakeholders. There are many reasons to delayed contract closing out. According to Rendon (2007), it is necessary to verify that all administrative matters other than the physically completed works are concluded on a contract. This is best done by designating and empowering a formal contract closeout team, procedures and checklist to ensure all final payments have been settled, all acceptance certificates, warranties and lessons learnt and best practices documented.

Even though ECDSWCo has training department and trainings are given regularly on other subjects, the company should consider also giving trainings on contract management. This also applies for other construction management bodies and institutes in our country.

This research shows the contract management practices, the gaps and the challenges faced by ECDSWCo's in managing contracts. The company can develop the practices used in the study by planned and sustained development activities through relevant trainings and experiences. Most of the practices can be adapted and developed, whereas few are more difficult to develop due to external problems. Documentation system should be introduced to keep records of lessons learned and best practices from the project's contract management in order to help project decision makings in the future.

In another case, most of the challenges faced by the company can be managed if related provisions and terms are included in the contract and enforced accordingly.

Finally, it is important that project stakeholders who manage directly or indirectly the construction project activities need to be made aware of the importance and impact of applying good contract management practices and properly addressing the challenges faced on the success of their projects. Exercising the practices fully will contribute to better project results and personal success of the individuals involved in the contract management of the projects.

5.4 Limitations and Suggestions for Further Study

The present study is limited its focus on the current practices and the challenges faced in contract management of construction projects supervised by ECDSWCo's in Ethiopia, which allows assessing the practices used and the challenges faced during contract management. However, a further, broader study encompassing a cross-section of different industries would be required to produce results that could be applicable to any organization.

Notwithstanding, the contract management practices used in this research could also be of interest to any organization that carries out contract based projects.

Furthermore the researcher suggests that future studies could be made on to validate the current results by involving a 360° appraisal questionnaire by including clients and contractors in rating the questionnaires.

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Addis Ababa University
College of Business and Economics
School of Commerce
MA Program in Project Management

Appendix I: Questionnaire

Dear Sir/ Madam,

I am currently working on a research on *practices and challenges in contract management of construction projects supervised by Ethiopian Construction Design and Supervision Works Corporation (ECDSWCo)* as a partial fulfillment for my MA study in Project Management in Addis Ababa University, School of Commerce. This research is aimed to assess the practices adopted and the challenges faced in managing contracts for projects supervised by your organization.

This questionnaire is designed to collect relevant data for my research and the research outcome will be used to recommend good contract management practices for efficient and effective contract management of construction projects. To successfully conduct this research, it is necessary to involve professionals who have experience in construction contract management.

In this respect, I believe you are among the one who can give the right information.

The data that you will provide are very important for the achievement of my research objectives. Hence, I kindly request the utmost attention and collaboration to fill this questionnaire in providing reliable and genuine information that could help to reach the right research outcome and conclusion. As a matter of ethical research, I solemnly commit that your response would be kept confidential and it will be used only for research purpose.

I sincerely request you to complete and return the questionnaire in a week time to enable me finalize the research on time to meet the deadline.

I thank you in advance for your invaluable time and cooperation

Address: Amanuel Haile (MA student, AAU), Tel. : 0911669224

Email: amanuelht@yahoo.com

I. General Information

1. Name of the project _____
2. Name of the client _____
3. Project location (City or Region) _____
4. Kindly indicate the responsibility that describes your role in the above mentioned project:
 - Project Manager/ Coordinator, Resident Engineer, Mgmt member,
 - Contract administrator, Consultant, Others (Kindly Specify).....
5. For the above mentioned project, please specify the project type :
 - New, Renovation /Rehabilitation , Expansion
6. For the above mentioned project, please specify the project category
 - Building construction, Transport road construction, Water works,
 - Other Infrastructure
7. Please indicate your gender. Male , Female
8. Please indicate your age. Below 25 , 25 - 34 , 35 -44 , 45 - 54 , 55 - 60
9. Please indicate your highest level of professional education obtained so far.
 - PhD, Master's degree, Bachelor degree, Diploma, Certificate
10. Please indicate your educational background _____
11. Please indicate your years of participation in contract management/administration, construction supervision , project management or consultancy.
 - Below 3 yrs , 3 - 5 yrs , 6 - 10 yrs , 11 - 15 yrs , Above 15 yrs
12. For the above mentioned project, what is the project duration in months _____
13. Given the complexity of projects in Ethiopia, please rate the complexity of the above project.
 - Low, Medium, High

II. Contract Management Practices Questionnaires

During the project's execution, in your capacity and knowledge, how do you rate the degree of contract management practices implemented by your organization in managing contracts? So please indicate genuinely the extent to which you agree with each of the following contract management practices statements by putting a tick (✓) in the appropriate response.

1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

| S/N | Contract Management Practices Measurement Items | 1 | 2 | 3 | 4 | 5 |
|-----|--|----------|----------|----------|----------|----------|
| | Pre-Award Process (Bidding and Selecting) | 1 | 2 | 3 | 4 | 5 |
| 1 | Is a pre-bid conference conducted to ensure all prospective bidders have a clear common understanding of the technical requirements and scope of work of the project | | | | | |
| 2 | Does your organization use evaluation criteria, evaluation standards, and a weighting system to evaluate bidder's proposals | | | | | |
| 3 | Does your evaluation much focus on project management and technical capabilities of the bidders | | | | | |
| 4 | Is consideration made on contractor's past performance on previously awarded contracts in evaluating proposals | | | | | |
| 5 | Does your organization conduct a pre-award survey on the potential contractor to verify the contractor's technical, managerial and financial capability | | | | | |
| 6 | Does your organization provide debriefings to the successful as well as unsuccessful contractors after evaluation result | | | | | |
| | Contract Management Start –Up | 1 | 2 | 3 | 4 | 5 |
| 7 | Are the standard form, conditions and terms of the contract clear to both client and contractor before signing the contract | | | | | |
| 8 | Do you perform project kick of meeting | | | | | |
| 9 | Does the contractor provide work, environmental & safety rules plans | | | | | |

| | | | | | | |
|----|---|----------|----------|----------|----------|----------|
| 10 | Do you review contractor's key personnel and manpower plan | | | | | |
| 11 | Do you review sub contractor's qualification and experience | | | | | |
| 12 | Do you make sure that the contractor submits contract securities and insurance coverage | | | | | |
| | Contract Administration Team | 1 | 2 | 3 | 4 | 5 |
| 13 | Is competent contract administration team assigned for contract managing | | | | | |
| 14 | Are the roles and responsibilities of the team clearly defined | | | | | |
| 15 | Do you carry out regular assessment of the team's performances | | | | | |
| | Communication and Relationship Management | 1 | 2 | 3 | 4 | 5 |
| 16 | Is there stakeholders' communication plan | | | | | |
| 17 | Do you properly manage the interface between the client, the consultant and the contractor | | | | | |
| 18 | Is there timely and proper management for queries and issues raised by the contractor | | | | | |
| 19 | Do you conduct regular meetings between the parties | | | | | |
| 20 | Do you implement clear and effective communication | | | | | |
| | Quality and Compliance Management | 1 | 2 | 3 | 4 | 5 |
| 21 | Do you make auditing of the contractor's Quality Management System (QMS) | | | | | |
| 22 | Do you review timely construction materials quality assurance certificates, test reports and shopdrawings | | | | | |
| 23 | Do you carry out timely inspection of the work's quality | | | | | |
| 24 | Do you control non compliance of works and track corrective actions | | | | | |
| 25 | Do you manage construction designs and design developments for the designs done other than your company | | | | | |
| | Performance Monitoring and Reporting Management | 1 | 2 | 3 | 4 | 5 |
| 26 | Is there project monitoring and reporting system | | | | | |
| 27 | Are regular progress reports produced and reported to relevant stakeholders | | | | | |

| | | | | | | |
|----|--|----------|----------|----------|----------|----------|
| 28 | Do you report major issues on time and have them addressed | | | | | |
| 29 | Is there mechanism to monitor contractor's resources , care of workand relationships | | | | | |
| 30 | Do you notify the contractor on obligation failure and recovery schedule | | | | | |
| | Document and Record Management | 1 | 2 | 3 | 4 | 5 |
| 31 | Is there established documentation system for contract management | | | | | |
| 32 | Do you maintain documents on time with registers | | | | | |
| 33 | Are your documentation and records supported by information technology | | | | | |
| 34 | Do you provide stakeholders with relevant, accurate and timely statistics and information when requested | | | | | |
| | Payment Management | 1 | 2 | 3 | 4 | 5 |
| 35 | Is there established financial system for payment process | | | | | |
| 36 | Do you notify the client and certify due payment on time | | | | | |
| 37 | Does the client effect payment on time to the contractor | | | | | |
| 38 | Do you advice the client for contingency plan/additional funds | | | | | |
| 39 | Is there penalty payment/compensation effected to the contractor for late payment by the client or to the client for late work by the contractor | | | | | |
| | Claims and Disputes Resolution Management | 1 | 2 | 3 | 4 | 5 |
| 40 | Is there established claims and disputes resolution mechanism | | | | | |
| 41 | Do you notify and assess timely client's claims to the contractor or viceversa | | | | | |
| 42 | Do you effectively negotiate claims with the contractor | | | | | |
| 43 | Do you support the parties for alternative dispute resolutions | | | | | |
| 44 | Do you represent the client in dispute resolution and legally support during court cases | | | | | |

| | Contract Risk Management | 1 | 2 | 3 | 4 | 5 |
|----|---|----------|----------|----------|----------|----------|
| 45 | Is there contract risks management system | | | | | |
| 46 | Are contract risks assessed periodically | | | | | |
| 47 | Is there responsible body assigned for managing contract risks | | | | | |
| 48 | Do you support the client for design risks for the designs done other than your company | | | | | |
| 49 | Do you monitor the contractor's financial status and bankruptcy potential regularly | | | | | |
| | Changes and Changes Control Management | 1 | 2 | 3 | 4 | 5 |
| 50 | Is there changes/variations control management system | | | | | |
| 51 | Are change/variation orders processed on time | | | | | |
| 52 | Is information required for the varied work properly assessed | | | | | |
| | Contract Close Out Management | 1 | 2 | 3 | 4 | 5 |
| 53 | Are there proper contract closeout procedures | | | | | |
| 54 | Are outstanding issues, claims or disputes resolved during closeout | | | | | |
| 55 | Are provisional acceptance certificates issued timely up on physical works completion | | | | | |
| 56 | Do you detect defects & notify the contractor within appropriate time | | | | | |
| 57 | Do you follow up rectification works for defects after provisional acceptance | | | | | |
| 58 | Do you release retentions and process the final payment within appropriate time | | | | | |
| 59 | Do you document lessons learned and best practices upon Completion of the project | | | | | |

III. Major Challenges of Contract Management

During the project's execution, in your capacity and knowledge, please indicate genuinely which challenges are faced during contract management by putting a tick (√) in the appropriate response

| S/N | Major Challenges of Contract Management | Yes | No |
|------------|---|------------|-----------|
| 1 | Poor development of design/scope of work/specification | | |
| 2 | Misunderstanding of contractual clauses, condition and terms | | |
| 3 | Misuse of advance payment by the contractor for purposes not related to the contract | | |
| 4 | Delays in handing over possession of construction site to the contractor | | |
| 5 | Resettlement issues or local disturbances at construction site | | |
| 6 | Delay in submission of securities , guarantees and insurance by the contractor | | |
| 7 | Late or non-submission of a quality assurance plan by the contractor | | |
| 8 | Late or non-submission of work program by the contractor | | |
| 9 | Unofficial delegation of the whole contract to another contractor who has no capacity to manage the contract | | |
| 10 | Use of unauthorized sub-contractors by the contractor | | |
| 11 | Delay in procurement of construction materials by the contractor due to non-availability or a sudden increase in price of materials in the market | | |
| 12 | Delay in mobilization of contractor's key personnel and equipment | | |
| 13 | Poor quality or non-conformance of the works by contractor | | |
| 14 | Lack of proper inspection and control of materials and work output | | |
| 15 | Non-payment by contractors to subcontractors or material suppliers | | |
| 16 | Non-compliance with local environmental protection measures and safety rules | | |
| 17 | Non-submission of construction materials test reports or quality certificate | | |
| 18 | Lack or delay of funding by the client to the project | | |
| 19 | Lack of communication and late/non-submission of progress reports | | |
| 20 | Work variations and extension of time are granted without justification | | |

| S/N | Major Challenges of Contract Management | Yes | No |
|-----|---|-----|----|
| 21 | Disagreement on claims on extension time , additional payment or on rates of construction materials | | |
| 22 | Incomplete or delayed submission/processing of contract variation requests | | |
| 23 | Late processing of interim and final payments by the client to the contract or | | |
| 24 | Delay in defects notification and correction works | | |
| 25 | Improper application of contractual-based suspension or termination provisions | | |
| 26 | Delays in applying dispute resolution mechanism | | |
| 27 | Delays in contract close out activities | | |

IV. General Questions

- Do you agree your contract administration practices meet the acceptable standards?
 Strongly Agree, Agree, Disagree, Strongly Disagree
- How do you rate construction management practices in Ethiopia to achieve project success?
 Competent, Fairly Competent, Incompetent
- How clear and understandable are the terms, conditions, concepts and ideas presented in the clauses of the conditions of contract currently used in the construction industry?
 Clear, Partially clear, Not clear
- Do you have contract management plan that shows what, how and when the contract management processes are executed? Yes , No
- From your experience, which project factors are greatly affected most due to poor contract management practices? Cost , Time , Quality
- From your experience, are there construction projects that are terminated or suspended prematurely due to various reasons? If your answer is yes, what are the major reasons?

7. Does your organization have training program on best contract management practices?

Regularly, Sometimes, Not at all

8. From your opinion and experience, what are the setbacks that affect much greatly to apply contract management practices effectively in your project?

9. Do you get stakeholders' support in managing contracts and their challenges?

Yes , No

10. Do you have plans and mechanisms to proactively address or solve the challenges you face during contract management processes? Yes , No

V. Any comments that are helpful for the questionnaire

-----The End-----

I am grateful for your considerate cooperation, thank you very much for your time and effort