



**ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE**

**Assessment of Project Procurement Practices and Challenges at
Ethiopian Roads Administration**

By: Dawit Jihad

A Project Work Submitted to Addis Ababa University, College of
Business and Economics, School of Commerce in Partial Fulfilment of
the Requirements for the Degree of Master of Arts in Project
Management

Advisor: Solomon Markos (PhD)

**Addis Ababa, Ethiopia
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<u>External Examiner</u>
	Signature	Date

STATEMENT OF DECLARATION

I, Dawit Jihad, hereby state that this Master research project entitled “Assessment of Project Procurement Practices and Challenges at Ethiopian Roads Administration” is an outcome of my personal work of study whereby all sources of materials used for the study have been duly acknowledged. I have personally prepared the document with the guidance and suggestion of the research adviser. To the best of my knowledge, such a study has not been submitted for any degree in this or any higher education institution. Hence, it is offered for partial fulfilment of the requirements for the degree of Master of Arts in Project Management.

Declared by:

Dawit Jihad
Student

.....

Signature

October, 2023
Date

STATEMENT OF CERTIFICATION

This is to certify that Dawit Jihad has conducted his research work on the topic entitled “Assessment of Project Procurement Practices and Challenges at Ethiopian Roads Administration” which is his own personal work and is appropriate for submission for the award of Master’s Degree in Project Procurement.

Advisor: Solomon Markos (PhD)

October, 2023

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ABBREVIATIONS

AC	Asphalt Concrete
AfDB	African Development Bank
ALT	Abnormally Low Tenders
BOT	Build-Operate-Transfer
BADEA	Bank of Arab for Economic Development in Africa
DB	Design-Build
DBB	Design- Bid- Build
DBOM	Design-Build-Operate-Maintain
DBST	Double Surface Treatment
e-GP	Electronic Government Procurement
ERA	Ethiopian Roads Administration/Administration
ESS	Ethiopian Statistics Service
ETB	Ethiopian Birr (Ethiopian currency)
ETCA	Ethiopian Transport Construction Authority
EU	European Union
FDRE	Federal Democratic Republic of Ethiopia
FIDIC	Fédération Internationale des Ingénieurs-Conseils (International Federation of Consulting Engineers)
FPPPA	Federal Public Procurement and Property Authority
GC	General Contractors
GCC	General Conditions of Contract
GDP	Gross Domestic Product
GOE	Government of Ethiopia
IDA	International Development Association
IHA	Imperial Highway Authority
JICA	Japan International Cooperation Agency
KPI	Key Performance Indicator
ICT	Information Communication Technology

IHA	Imperial Highway Authority
MoF	Ministry of Finance
MoWUD	Ministry of Works and Urban Development
NDF	Netherlands Development fund
OECD	Organization for Economic Co-operation and Development
OFID	OPEC Fund for International Development
OPEC	Organization of Petroleum Exporting Countries
PCR	Public Contract Regulations
PEC	Procurement Endorsing Committee
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PPD	Public Procurement Directive
PPSD	Project Procurement Strategy for Development
RC	Road Contractors
ROW	Right of Way
RSDP	Road Sector Development Program
SFD	Saudi Fund
TAC	Tender Analysis Committee
UK	United Kingdom
UNICEF	United Nations for International Children Emergency Fund
USA	United States of America
USD	United States Dollar
VFM	Value for Money

ABSTRACT

The main objective of this study is to examine the project procurement practices and challenges in the case of Ethiopian Roads Administration particularly addressing lack of competitiveness and inefficiencies recorded in recent years. Explanatory Research Design with Quantitative Research approach was employed. Both Primary and secondary Data were used during this research work. Primary Data was collected via self-administered questionnaires from the population of the main stakeholders engaged on federal road construction projects which are the Client's staff, Contractors and Consultants by using non-probability sampling approach particularly purposive sampling technique. As secondary Sources, internal archives of procurement reports, different literatures related with the topic under study were used. The constructs in this study were developed from prior studies, review of pertaining archives, suggestion of experts and personal experience. The instrument was evaluated for reliability and validity. Statistical data of mean scores and weighted mean scores were used to analyze the data. The result showed that ERA's practices are basically in compliance with the law and adopted some best practices on high-complex construction projects. However, challenges were identified related to the other variables such as unfair risk allocations, inadequate planning, extended bid process time, insufficient stakeholder engagement and also severe delay of payment disbursement, decision making impacting the reputation of the organization. There is residual capacity to effectively conduct procurement activities while identified sub factors related to the existing legal framework are found unsuitable to address the current procurement issues. To address the insufficiency of procurement planning underpinning to other challenges, it is suggested to prepare long-term master plan and rely on the outcomes of market assessment to determine the number of project activities. The administration is advised perusing other proposed areas of improvements which are to be addressed by the office itself, or engaged on measures to be taken by FPPPA to address gaps on the current legal framework including the current price adjustment scheme, method of selections, qualification criteria. Finally, the researcher recommends future researchers to consider better sample size, other variables that are not included here to get more reliable results.

Keywords: Project Procurement, Project Performance, Construction Project, Ethiopian Roads Administration

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team which includes three fundamental stages, i.e., Planning, Conducting and Controlling the Procurements each stage with its own steps involving inputs, tools & techniques and outputs as shown below per PMI (2017); although, other editions of PMBOK indicate Closing as a separate stage from Controlling.

When dividing the large field of project management into digestible parts, the PMI has identified Project Procurement as one of 10 project management knowledge areas in its guidance books, i.e., A Guide to the Project Management Body of Knowledge (PMBOK).

Unlike the traditional thought of procurement being a mere selection of contractor till the stage of awarding the contract, managing procurement relationships, monitoring performance, marking changes and corrections as well as closing out contracts are now regarded as procurement activities among various institutes including PMI and the World Bank. Each individual procurement endeavour is unique that comes along with significant risk which needs writing contracts that accurately allocate specific risks to those entities most capable of managing them; however, in general, they broadly follow a similar process. There are seven step that are in project procurement activities which are developing a strategy, planning, invitation; receive offers, evaluation, award and management of contracts. It has emphasized the need to develop the Project Procurement Strategy for Development (PPSD) document as a basis and justification for procurement decisions, including the approach to market and selection methods since activities at the frontend would facilitate ease of implementation and minimize risks at the backend of the procurement World Bank (2020).

When it comes to Ethiopia, all Public Procurements needs to be carried out strictly adhering with the fundamental principles indicated in the FDRE Procurement Proclamation 649/2009,

which includes ensuring value for money, non-discrimination among candidates, transparency & fairness, efficiency, effectiveness, accountability and careful handling of public property.

The procurement of construction project is vast in scope because it involves the gathering and organizing of myriads of separate individuals, firms and companies to design, manage and build construction products such as roads, bridges etc. for specific clients or “customers”. Procurement comes from the word procure which literally (per a definition from Oxford Dictionary) means “obtain by care or effort”; “to bring about” and “to acquire”. System is about “organized method, approach, technique, process or procedure”. In this context, project procurement is very much concerned with the organized methods or process and procedure of obtaining or acquiring a construction product.

Selecting a capable contractor/consultant is one of the most important tasks performed by procurement department when procuring for project. During bid evaluation, each offer must be carefully considered, on an equal basis, against the published evaluation criteria. The process must follow the approach and methodology set out in the procurement documents. The evaluation panel, in case of Ethiopia’s law the Procurement Endorsing Committee, must determine the best supplier based on the information provided by suppliers in their offer. The evaluation should take into account capability, capacity and value for money. Due diligence should be used to verify that the preferred supplier has the capacity and capability to successfully deliver against the specified requirements (Chua et al., 1999). Clear, concise and comprehensive notes are to be taken of all evaluation panel discussions and findings. The procurement function should keep a full record of how each offer was assessed against the criteria and demonstrate that each received due and fair consideration. Where an offer is rejected the reasons for the rejection must relate to the evaluation criteria, be justifiable, clearly explained and recorded in writing.

In cases of complex projects, such as high value construction projects, the process may involve managing multiple contracts simultaneously or in sequence. In such cases, each contract life cycle may begin and end during any phase of the project life cycle. The design stage and that of the civil works construction together with the supervision consultancy

contract could be typical example for such a process of managing contracts simultaneously or in sequence.

1.2 Background about ERA

Following the eviction of the Italian occupiers, the Imperial Ethiopian Government was convinced that a Road Agency solely responsible for rehabilitating/restoring and expanding the road network throughout the country had to be established. Accordingly, the Imperial Highway Authority (IHA) was established under proclamation No. 115/1951 as a semi-autonomous agency with specific duties to plan, design, construct, and maintain roads. Responsibilities for construction and maintenance of roads remained under a single autonomous authority (IHA) for 26 years (1951-1977). The Ministry of Transport and Communication turned out to be the supervising authority of ERA. The Ethiopian Roads Authority has been re-established under proclamation 133/1978 incorporating, among others, the Rural Roads Department in addition to the Highway Department.

In 1980, the Military Government that took power in 1974 reformed the agency into the Ethiopian Transport Construction Authority (ETCA) by proclamation No. 189/1980 and became answerable to the newly formed Ministry of Construction. The proclamation enlarged responsibility of the Authority by expanding its task to incorporate the construction of Airports, Seaports, Railways, and Municipal Roads.

Following the shift from a command-based economy to a market oriented one in 1991, ERA was re-established by proclamation No.63/1993 with a view to providing a strong administration under the leadership of a Board. As part of its reform, the government assigned administration of rural roads to the regional self-governments and main roads to ERA as part of the Federal Government's responsibility. ERA's role regarding rural roads was then limited to rendering support such as overall network planning, training, and technical assistance as required by Regional Governments.

To cope up with existing situations, ERA was again re-established bearing its previous name, i.e., Ethiopian Roads Authority, by proclamation No. 80/1997 with the objective to develop and administer highways, and to ensure the standard of road construction. Following the

reformation of council of ministers in October 2021, MoWUD (although given another name for a brief period) was tasked in advancing the basic infrastructure of the country. During such period, ERA was operating as wing of MoWUD in charge of various end-to-end activities of the federal road network infrastructure from planning to asset management. The administration was also accountable for the board chaired by such Ministry Offices for which it is report for such as MoWUD, Ministry of Transport, then Transport & Logistics, and the Ministry of Urban Infrastructure; however, it is now chaired by the State Ministry of MoF.

With the establishment of the new cabinet of Ministers in October 2001, a Ministry of Infrastructure and later on Ministry of Works and Urban Development (MoWUD) has been formed with the responsibility of developing the infrastructure of the nation. ERA, which is one of the organizations under the Ministry of Works and Urban Development and accountable to the Board, is responsible for planning and formulating long and short-term plans and programs for road construction, design, maintenance of trunk and major link roads, as well as for administration of contracts.

Beginning from the formation of the organization, in the last seven decades, the administration (ERA) has played irreplaceable role in the highway infrastructure of the country. It has solely been responsible towards the planning, designing, constructing, and maintaining all highways in the country in the first forty years. Following the governmental re-structure in 1991 instituting regional road authorities, the Ethiopian Roads Authority remained the giant in shaping and running the highway infrastructure.

Moreover, following the introduction of Road Sector Development Program (RSDP) since 1997, it re-defined road functional classifications and has been leading and coordinating other city and regional authorities of the country. In relation, since the emphasized government attention towards road infrastructure, the number of projects under implementation has been tremendously increasing every year.

The organizational model of ERA is a project-based organization, originally structures from a technical assistance from a highway authority from USA, where it tends to re-structure to cope up with the ever-grown portfolio of projects it manages. Currently, ERA administers more than 200 road construction projects throughout the country. In the past decades, ERA

has been working in collaboration with several financing partners including the World Bank, African Development Bank (AfDB), JICA, BADEA, OFID, Saudi-Fund (SFD) and the European Union (EU) apart from the fund secured from treasury.

In the first decades after its establishment, prior to the emergence of the private sector, ERA had been playing the sole role of designing, constructing and supervising the projects bringing foreign experts/institutions on board as for technical assistance; however, following the emergence of the private sector contractor and consultant as well as the ever-growing number of projects in its portfolio, outsourcing of activities via project procurement became a necessity as a way of creating value in the prevailing environment. These days, ERA's role is limited to overseeing, administering, and managing the projects preparing of Specifications, Quality Standards, Design Manuals, and other policies, procedures and standard documents to assist the same. Hence, these days, ERA carries out hundreds of project procurements as its routine activity in line with its mandate indicated in its establishment proclamation.

Each individual road construction project entails the need to acquire different suppliers, contractors and consultants, at various stages of the project life cycle. Initially, ERA procure a consulting firm for the design of the project; later, as an outcome of the deliverables of the design consulting firm, subsequent tenders will be floated for the civil works contractors responsible for the actual construction of the project and an independent Engineer; known as supervision consultant, to monitor, supervise, and administer the construction works. Hence, under normal circumstances where a given project is to be delivered in a design-bid-build project system, a minimum of three individual procurements will be carried out. Procurement decisions would be the responsibility of the Tender Analysis Committee (TAC), Procurement Endorsing Committee (PEC), the Director General of ERA and ERA's Board in its order or priority, as appropriate, depending on the item and value of procurement.

1.3 Statement of the Problem

Ethiopia is a land locked country where the major share of passenger and freight movement is by means of road transport and where the transport network is recognized as a major bottleneck. In such context of Ethiopia, road is the most important infrastructure that provides access to rural and urban areas in the country. Roads play crucial role to reduce

transportation cost and support economic growth in the county. As the government of Ethiopia cognized the role played by road infrastructure in economic development and poverty reduction, the country has undergone rapid expansion in road infrastructure since 1997 as the result of the Road Sector Development Program (RSDP). Massive amount of capital has been invested by the government with the support of international donors for the provision of all-weather roads that improve regional connectivity.

The public procurement market accounts for a substantial amount of the annual budget, roughly 60% (World Bank, 2019). In recent years, USD 3 Billion is being spent on annually towards federal procurement. Per PPPA's report, in 2021 Public Procurement accounted 64% of the annual budget and 14% of the GDP. Infrastructure project contracts of various sectors with the supply of pharmaceuticals takes the lion share as the highest sectors in terms of volume of procurement.

From the annual federal budget allocated to the so-called pro-poor sectors; namely, education, health, road construction, water and energy, and agriculture, the share towards the road construction is substantial, an average of 20% from the total budget, based on the information of the Ministry of Finance (UNICEF, 2022). For instance, the government has allocated ETB 67.45 billion, from various resources including government treasury, loans & grants, for the road construction for the past fiscal year, i.e., 2021/2022.

On the other hand, PMI report shows that completing projects within budget and time is still a global challenge where the level of accomplishment on both constraints is below 60%. When it comes to projects executed in Ethiopia, including ERA, the results are not kind where almost all projects are being delayed beyond the originally intended contract duration as well as associated cost implications (W/Tensay, 2008 and Assefa, 2014).

Hence, owing the potential impact procurement have on the efficiency of projects delivery, particularly the road construction sector in Ethiopia, giving due attention to such critical aspect of the project management process is paramount. Hence, assessment of ERA's project procurement practices against the prevailing circumstances such as existing laws, knowledge areas, best practices, social & environmental contexts, and also understanding how it affecting the project performance, if any, is very critical.

Based on the annual project procurement reports forwarded to the FPPPA in the past four years, the annual performance report archives of the Engineering Procurement Directorate that is responsible for procuring construction projects and corresponding design & supervision consultancy contracts, as well as experts engaged on federal road construction projects, depicts surprisingly higher number of retenders/annulments of project procurement tenders due to absence of bidders, applicants failing to meet the minimum qualification requirements, submission of exaggerated offers when compared to the Engineer's estimate. Furthermore, the competitiveness of its tenders is decreasing due to limited number of bidders due to which the award prices are increasing. This is also coupled with extended period required to complete project procurements when compared to its business standard, practices of other institutions and countries. The researcher also has more than decade personal work experience closely project procurement activities observing the above stated shortcomings on the current situation.

Hence, in line with the administration's effort to mitigate such inefficiencies, the subject study tries to assess the process, identify challenge and suggest way forwards to enhance the competitiveness and process efficiency; and ultimately to have consistent attainment of value for money out of the contracts to be procured.

Furthermore, though other researches have been carried out on project procurement, in general and specific to other organizations in the country, the practice on the road infrastructure in general, particularly about this federal organization responsible for the lion share of the public money is not specifically dealt in detail in the context of the existing procurement law, best practices and theoretical background of the knowledge area. In relation, earlier studies of previous researches mainly focus on the project procurement practices of other non-project intensive/based organizations, Ali (2019), on Assessment of Project Procurement Management Practices in Case of Ethiopian Airlines; and Fikremariam Abebe (2017) on Procurement Management Practice in the Bank of Abyssinia, are noteworthy. There are also other studies found from the Addis Ababa University Institutional Repository on the project procurement practices of various organizations; however, their scope of coverage is limited due to their customer profile owing to the limited number of projects and also geographical coverage not to mention lacking to address the variables

which are interest to this study. Furthermore, previous studies are not focused trying to encompass the entire process from initiation to conclusion as they solely relied on the PMBOK work processes; while the subject research, pays specific attention to the project procurement process till the award of the contract.

Hence, as project procurement practices and challenges of the Federal Ethiopian Roads Administration is not covered in earlier studies and as per the information gathered from the organization; the study is believed to be crucial as the organization is responsible for the execution of hundreds of road construction projects worth of hundreds of billions birr.

Therefore, the purpose of this study is to evaluate the procurement procedures of Ethiopian Roads Administration projects in order to examine how they correspond with the knowledge area of project procurement management and best practices.

It analyses the research to pinpoint main focus areas and strengths giving emphasis on the initial selection process of project procurements, as well as identifying areas of weakness and research gaps, which are seen as potential topics for new research, to particularly to be pursued by the entity itself, i.e., ERA, and Construction Authority. As noted above, detailed previous personal engagement from senior to managerial position of the project procurement activities makes the subject study different from other to collect and review pertaining documents, identify and assess the relevant variables reaching out to experts in the sector.

1.4 Basic Research Questions

The following shall be answered after the research is completed:

1. What is the project procurement practices of ERA?
2. What are the gaps between the project procurement practices when compared to the knowledge area, existing law and best practices?
3. What are the challenges affecting the performance of project procurement process in ERA?

1.5 Objectives of the Study

General Objective

The general objective of this research is to assess the existing project procurement practices and challenges of the Ethiopian Roads Administration.

Specific Objectives

The specific objectives are:

1. To assess the project procurement practices in ERA.
2. To identify gaps between the project procurement practices and the knowledge area, existing laws and best practices.
3. To examine the challenges of project procurement of the ERA.

1.6 Significance of the Study

The findings of this study may help the Client to give objective & collective feedback on the perception of the current procurement system from different stakeholders. It can also give an advantage to reassess/review its process against various internal and external aspects, starting from the law of the country, the macro-economy of the country, and also its current working system. Furthermore, once fully realized, identified challenges and recommendations, if any to be highlighted, may provide some perspective thereby can be an input/driving force to further closely work with its partners.

1.7 Delimitation/Scope of the Study

The scope of the research is limited to the study of the on-going project procurement practices and challenges at the federal highway projects implemented by the Ethiopian Roads Administration. The researcher delimited this by recommending that further studies be done in other government & private project procurement practices with different industrial cultures. The scope of variables will be limited to government policy, resources dedicated for procurement, inflation, qualification criteria, risk allocation and procurement planning towards the effectiveness of project procurement process.

Sampling will be used in this study. All participants to be selected for data collection are professionals involved in road construction projects of ERA, mainly, contractors & consultant. In addition, annual project procurement performance reports of recent years are used to supplement the findings of the survey.

Therefore, the research is to review the existing/current project procurement practices of only the road construction industry associated with ERA. Finally, it also worth noting that some recommendations might be suggested; however, the main objective of the study is the review of the process and identification of challenges.

1.8 Organization of the Study

The Research report is to be prepared in five separate chapters. The first chapter is an introduction containing the background of the study and the subject institution, statement of the problem, basic research questions, objectives of the study, significance of the study, and delimitation/scope of the study. The second chapter deals with the literature review relevant to your study. It will have an introduction, theoretical review, empirical review and the conceptual framework of the study. Chapter three will discuss the research methodology addressing the type and design of research; the subjects/ participant of the study; sources of data; data collection tools; procedures of data collection; and methods of data analysis used will be discussed. Then in the fourth chapter the paper presents the results/findings of the study and interprets and/or discuss the findings in reference to the literature review. Finally, chapter five discusses summary of findings, conclusions, limitations of the study and recommendations. References and annexes are enclosed at the end of the report.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The project procurement practices as per the law of the nation and the relevant institution, i.e., Ethiopian Roads Administration, were reviewed in this chapter along with the literatures on public project procurement, an overview of the project management body of knowledge with regard to project procurement management, and project procurement management. Besides, it reviewed literature on important aspects related to project procurement such as government policies, professional resources, planning, etc. as well as challenges associated with the practices in other studies. This chapter provides an overview of previous research on knowledge in the form of theoretical and empirical literatures based on which gaps on the existing literatures will be identified. Finally, it introduces the framework for the subject study that comprises the main focus of the research described in this thesis.

2.2. Theoretical Literature

2.2.1 Definition of Procurement

According to Kidd (2005), procurement is “the business management function known as procurement is responsible for ensuring the identification, sourcing, management, and access to the external resources that a company may require so that it achieves its strategic goals. Procurement aims to investigate supply market opportunities and implement resourcing plans that provide the organization, stakeholders, and customers with the most significant supply outcome possible.” Procurement uses a body of data that skilled practitioners and specialists understand to apply the science and art of managing external resources and suppliers. Despite often referring to the final buying step, the term "procurement" can also refer to the entire procurement process. While companies can act as buyers and sellers, the emphasis is often on the company performing the soliciting. Procurement is defined as getting "the five rights": exceptional quality, exact amount, appropriate timing, appropriate pricing, and appropriate source. The benefits of procurement are numerous. It serves the strategic organizational objectives of supply assurance, market expansion, product innovation, and cost reduction.

2.2.2 Public Procurement

The definition of the term "public procurement" is self-explanatory because it makes obvious that "public" refers to the government and "procurement" means "buying" or "purchasing." As a result, public procurement may be defined as a procedure or method used by public bodies to acquire or pay for goods, services, or occasionally a combination of both (Thai 2017). It is also described by scholars as a process of evaluating, purchasing, and receiving goods, services, and works. When undertaken by public organizations, in their name, or with their funding, an activity is referred to as public (Adotévi 2004).

Ethiopia's procurement act, proclamation No. 649/2009, defines procurement as "obtaining goods, works, consultancy or other services through purchasing, hiring or obtaining by any other contractual means." These procurements, in the case of project-based organizations such as ERA, may entail that the projects procurements are to be carried out in line with the existing legal frameworks. According to the aforementioned definitions, the general goal of procurement is to acquire goods, works, consultation services, and other services at the appropriate price, the right location, the right time, and the right quality in order to meet organizational goals.

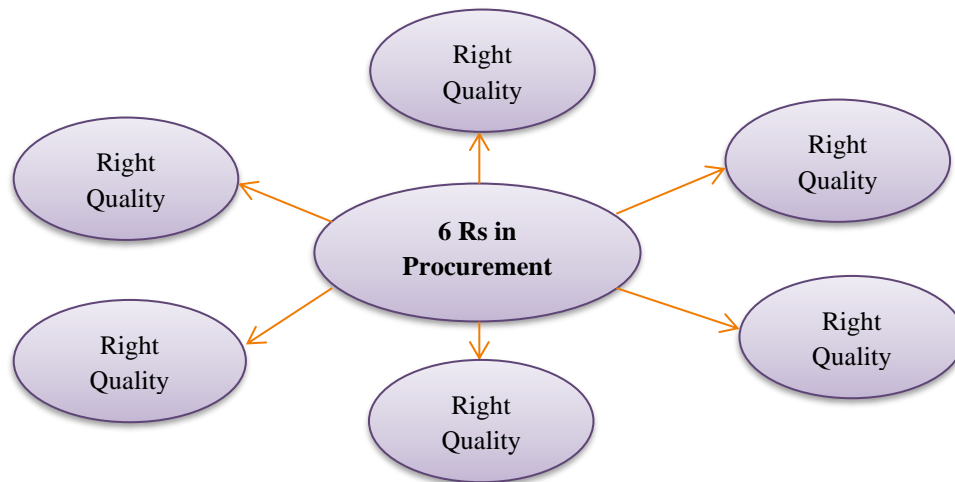


Figure 1: The Six Rights in Procurement

2.2.3 Procurement Principles

For institutions like ERA, despite being project-based, are required to strictly abide the existing government/ public procurement laws; hence, discussing principles which are the

foundation of procurement is important. These include value for money, ethics, competition, transparency, and accountability as briefly discussed below.

(a) Value for Money (VFM)

According to Bauld and McGuinness (2006), this is the most important procurement concept, which calls for public organizations to consider developing their policies, procedures, and priorities when they are receiving the highest returns on their investments. When awarding contracts to suppliers, states are occasionally free to take into account factors other than lowest cost, such as technical expertise, strategic employees' educational backgrounds, and prior performance histories (Qiao and Cummings, 2003). The governments may spend more money on these items, but they will also reap more rewards and perform better.

(b) Ethics

Because procurement specialists are expected to adhere to ethical conduct to a greater extent than other professionals, ethics is one of the key principles of public procurement (Atkinson 2003). This still may not be known by some professionals, which could lead to major problems including violations of the relevant code of conduct. According to Atkinson (2003), there are 500,000 procurement professionals working in the US markets, but only 10% of them are members of a professional organization that offers trainings on ethical procurement practices. The other 90% are ignorant of these practices as well as the legal standards that apply to the procurement process.

The high proportion of poverty and lax enforcement of the law in developing nations contribute to corruption, which makes public procurement more vulnerable to it (Nwabuzor, 2005). The international market's ethical conundrum requires the creation of an effective and efficient benchmark as a universal answer.

(c) Competition

The majority of goods and services are obtained through competitive tendering. Significant amount of public money is spent on public procurement, and because of this, it may have an effect on the structure and operation of competition in the market as a whole. In order to maximize the benefits to society and preserve competitive markets, it is essential to maintain

the integrity of the public procurement process (OCED, 2011). The likelihood of partiality, corruption, and fraud is decreased by this method of competitive tendering. Additionally, it promotes and strengthens the involvement of more suppliers, and high levels of competition result in price reductions and an enhancement in the quality of goods and services (Erridge et al., 1999).

(d) Transparency

Deighton-Smith (2004) defines transparency as “openness of the system which makes it very important for the process of procurement. It is an essential aspect to ensure accountability and minimize corruption. Transparency, being the core value of governance, has increased eminence in the OECD states and close association in raising the agenda of the government.” In both developed and developing countries, there is a high level of corruption in the public procurement sector. Transparency is crucial in encouraging governments to uphold higher standards of morality and the rule of law and guarantees that they are subject to public review (Deighton-Smith 2004). Furthermore, it guarantees that contracts and tenders will be awarded fairly to both domestic and foreign investors. Foreign suppliers are more negatively impacted than domestic suppliers by the lack of transparency in all markets and the lack of knowledge about the rule of law, principles, and practices, which operate as barriers and obstruct trade (Arrowsmith, 2003).

(e) Accountability

In addition to keeping private businesses accountable to their individual stakeholders for all financial transactions, accountability also applies to entities in the public sector (Hughes 2003). Governments should define the power for approval, based on an acceptable division of labour, as well as the tasks for internal reporting, to establish a clear chain of accountability. Additionally, the frequency and quality of controls should correspond to the level of risk. To eliminate gaps or loopholes and to make sure that the information generated by controls is as complete and helpful as possible, internal and external controls should complement one another and be properly coordinated (OCED, 2011).

2.2.4 Procurement in Ethiopia

The Ethiopian government Procurement and Property Administration Proclamation No.

649/2009, which was passed on September 9, 2009, is the main principal law governing government procurement. The proclamation is supported by the comprehensive Public Procurement Directive (PPD), which was published in June 2010 and updated in December 2015 and December 2016. As a result, all procurements, including construction projects, are governed by the current public procurement law.

The regional states have also made proclamations governing public procurement. The federal PPL affirms that the terms of any agreement between the federal government and one or more regional states, or with international organizations, shall take precedence over the PPL to the degree that such obligation arises from or is governed by such agreement. In addition to the Public Procurement Manual (December 2011), Manual on Public Procurement Complaint Procedure (April 2011), and Manual on the Use of Framework Agreements (May 2011), the federal PPPAA also produces other guides. Similarly, even if the MoF's Model Pool Directive has not been enacted, secondary laws and advisory materials are published in the regional governments. The allocation of PPP contracts for many different infrastructure facilities and assets is governed by a separate PPP proclamation that was released in 2018. The process for awarding a PPP contract must generally be competitive. It's also acceptable to use different purchase procedures. World Bank (2021)

According to the Ethiopia's Proclamation 649/2009, article 33(1), the following as alternative methods of procurement are provided; however, it is expressly specified that public entities must employ open bidding as the preferred method of procurement unless an exemption is made as otherwise permitted to adopt other forms of procurement.

- Open Competitive Bidding (National or International);
- Request for Proposals;
- Two-Stage Tendering;
- Limited Tendering;
- Request for Quotations;
- Direct Procurement.

Steps which are to be taken in open tendering in construction projects are shown in the figure below:

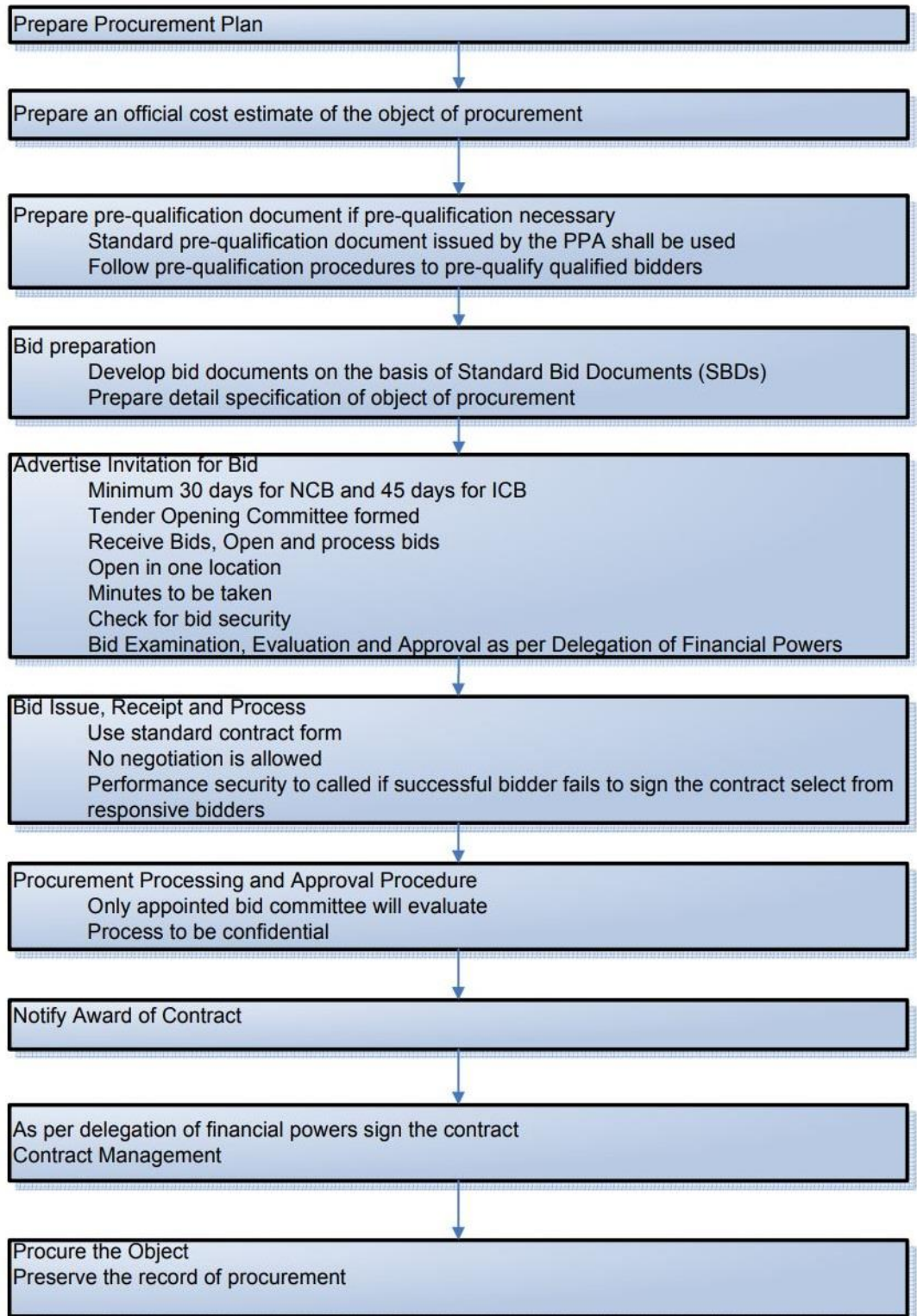


Figure 2: Steps in Public Procurement Process in Open Bidding

Source: Derived from Federal Public Procurement Manual of the Public Procurement and Property Authority (2012)

2.2.5 Project Procurement Management

According to Kerzner & Kerzner (2017), “Project Procurement Management includes processes required to acquire goods and services from outside the organization, to attain project objective, the constructed facilities. It involves capital projects development whether it is in the form of a new grass-root facility, expansion, renovation, improvement or in some cases disposition of facilities.” The major procurement processes are identified as procurement planning, solicitation planning, solicitation, source selection, contract administration and contract closeout (PMI, 2000).

- (a) **Procurement Planning:** is the process of determining which project requirements can be best satisfied by obtaining goods or services from sources outside the organization. It should be carried out during the scope defining effort (Huda et al., 2019). It involves consideration of whether to procure, how to procure, what to procure, how much to procure, and when to procure. Procurement planning decisions normally questions whether it is better for an organization to perform the work internally or to buy it from the others; the buy or make decision (Richardson & Jackson, 2018). These decisions have a profound impact on project success or failure and are normally tied up more to organizational strategic planning decisions rather than the project management domain.
- (b) **Solicitation Planning:** entails assembling the records required to support a solicitation (Richardson & Jackson, 2018).
- (c) **Solicitation:** involves the process between the preparation of procurement documents and the submission of proposals by the bidders. The bidders actually put in the majority of the work in this process, typically at no expense to the project.
- (d) **Source Selection:** entails receiving bids or proposals and then application of proper assessment criteria in order to choose suitable provider. In the source selection decision-making process, a number of criteria besides cost or price may need to be assessed.

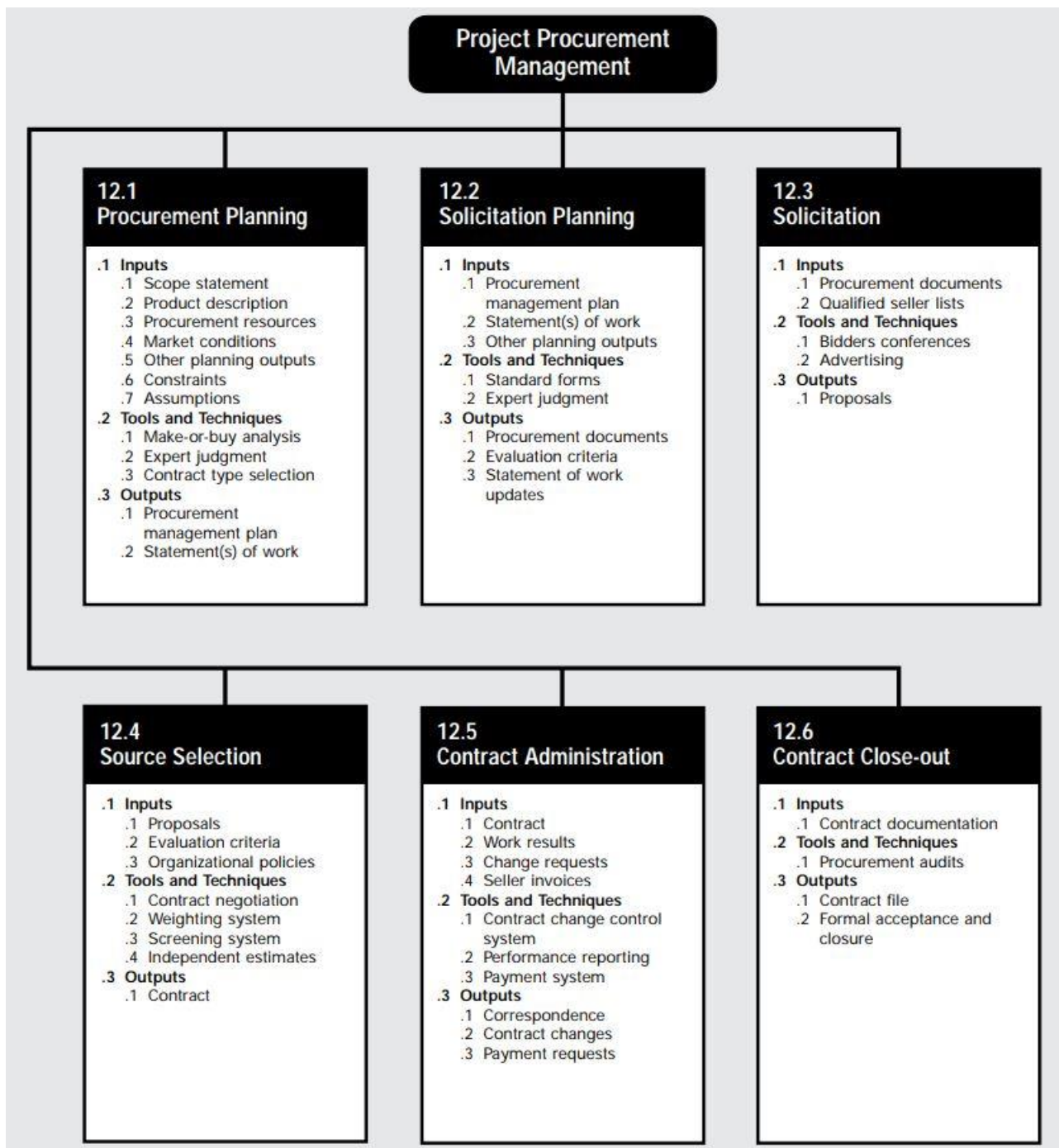


Figure 3: Project Procurement Management Overview (PMI, 2000)

(e) **Contract Administration:** is the process of confirming that a contractor's performance complies with the terms of the contract. Managing the interfaces between the various suppliers is a crucial component of contract administration on bigger projects with

several work packages and contractors. The project team must be fully aware of the legal ramifications of decisions made when administering the contract due to the contractual relationship's legal character. Financial management is a part of contract administration as well. Payment conditions must be specified in the contract and entail a clear connection between the contractor's accomplishments and payments effected/disbursed.

- (f) **Contract Closeout:** similar to administrative closeout since both entail verification of end product. Contract closeout procedures may be outlined in the terms and conditions of the agreement.

2.2.6 Construction Project Procurement

The procurement of construction projects has a broad reach since it entails the coordination and integration of numerous individuals, businesses, and corporations to develop, manage, and execute construction products (Ogutu and Muturi 2017). The procurement process used in the construction industry is very different from that used in manufacturing or retail, which can set up reliable supply chains to match the on-going demand for their products. The planning, risk analysis, evaluation of potential solutions, choice of funding sources, awarding of the contract, payment of compensation, and contract management are all activities connected to the procurement process for construction that will last up until the end of the defect liability/notification period (Araujo et al. 2017). The procurement procedure and a project's effective completion have a significant positive linear relationship, according to Ogutu and Muturi (2017).

Procedures of Project Procurement of the Construction Industry

Construction Project management comprises various processes mainly categorized as pre-construction (pre-contract) which consists the initiation, feasibility, design, tendering and award; and also, the construction stage procurements which includes the construction, performance evaluation and commissioning & handover. The following procurement processes are found worth reviewing.

a) Design Stage:

For several project performance factors, including life cycle costs, project expenses, and schedule, the design stage is crucial. In fact, it has been determined that poor design accounts for 30% of time and expense overruns in building projects (Minato, 2003). A design with high constructability and adequate plans and specifications has been found to increase overall project performance (Chua et al., 1999). The level of detail in the design work can be customized by the client. The extremes are to thoroughly define the technology (i.e., design-bid-build contracts) or to just define the product's performance and functionalities (i.e., design-build contracts).

b) Bid Invitation

Public procurement laws limit the type of bid invitations that public sector clients can issue, requiring them to be open invites where any contractor is permitted to submit a proposal. Of course, the goal is to increase transparency and competitiveness. Due to the constant change in actor configurations across projects, the disadvantage is that it hinders the long-term growth of enduring relationships (Dubois and Gadde, 2000). Because of this, clients in the private sector frequently take advantage of the opportunity to choose just a few reliable contractors to meet with them or even to negotiate with just one contractor in particular (Lam et al., 2001).

c) Bid Evaluation

One of the most crucial jobs for clients who want their projects to succeed is choosing a qualified contractor (Kumaraswamy and Anvuur, 2008; Fong and Choi, 2000). According to Lam et al. (2001), bid evaluations can take into account a wide range of factors, including bid pricing, technical proficiency, managerial potential, prior experience, reference items, environmental and quality management systems, financial stability, and teamwork abilities. Particularly among public clients, clients historically place a relatively high value on price and a smaller value on soft characteristics (Fong and Choi, 2000). The desire to switch from lowest price selections to multi-criteria selection that also takes into account soft characteristics has recently grown, however (Kumaraswamy and Anvuur, 2008).

d) Performance Evaluation

Either the client or the contractor may execute the control of the on-going job and the finished product. Construction clients typically handle the majority of the control instead of leaving it up to the contractor. End inspections of the final product are typically highly thorough, using up time and resources without contributing anything to the final result.

Strict regulation of contractors' behaviour and output surges the probability of taking advantage of convenient situations and hampers partnership (Korczyński, 1996). On the other hand, as a result of earlier discovery of defects and less comprehensive end inspections, more reliance on contractors' self-control may instead save money and time. Given that depending on others is difficult to oversee their job, contractors may become more concerned with quality if they exercise self-control (Eriksson, 2009).

2.2.7 Construction Project Delivery System

The two main methods of execution of projects are design-bid-build (DBB) and design-build. The client or its representative develops a set of plans and specifications for a design-bid-build project that are comprehensive enough for all qualified contractors to understand (Arshad et al., 2019). A contract is awarded to the qualifying bidder with the lowest price. A contractor is hired to complete the design and build the resulting project once the owner or the owner's representative prepares preliminary/concept design and/or a set of functional specifications, sometimes called requirements while the actual design is to be substantially delivered together with the construction of the infrastructure. Design-build-operate-maintain (DBOM), build-operate-transfer (BOT), and related combinations are other versions.

a) Design-Build (DB)

Adopting DB execution method in the construction sector produces a project in which the design and construction services are to be delivered by only one firm known as the design-builder (Papajohn et al., 2020). A designer is appointed on one side of a building project, while a contractor is appointed on the other. The typical sequence of work is disrupted by the design-build procurement approach (Hasanzadeh et al., 2018). It satisfies the client's desire for a centralized point of contact in order to decrease risks and total expenditures. It is

currently extensively used in many nations and contract forms that are freely accessible in a variety of formats. In our building business, a preliminary/concept design will be developed together with the employer's tendering requirements, on which bidding companies will submit a lump-sum offer to deliver the stated scope.

b) Design-Bid-Build (DBB)

DBB is a project delivery approach in which the client hires distinct organization to prepare detailed set of plans, design and specifications; based on which it will then hire a separate contractor to deliver/execute the infrastructure. The DBB process comprises three primary sequential phases: designing, solicitation/selection of a contractor via bidding process, and the actual implementation of the project (Abou & Ashi, 2019).

The owner hires a construction firm often based on pre-defined condition of contract to deliver the project within specified period of time. Since the client is to provide the detailed design for the contractor, it will bear risks associated with design changes and variations; yet, providing some form of flexibility at later stage for any modifications during implementation of the project Gransberg and Maraqa (2002).

2.2.8 Performance Criteria as an Indicator for Project Success

Usually, the attention of scholars and even organizations is on the basic constraints of a project which are cost, time and quality to determine the performance and success of the endeavour. Whereas, some scholars include other parameters as a success criterion such as customer satisfaction, application of innovative practices, sustainability, environmental, safety aspects among others (Noorzai & Golabchi, 2020).

(a) Economic Performance: the whole cost of a project from start to finish, is of particular relevance since it is likely to demonstrate optimized/ efficient means of resource consumption/ utilization. The other critical factor is ability to forecast project completion cost predictability, i.e., whether the ultimate total expenditure matches the initial evaluation (Swan and Khalfan, 2007).

- (b) Time Performance:** The essence of time is ever increasing in the global context which has resulted in a trimmed/ constricted timetable to deliver projects. Despite being such an important performance requirement, the fact on the ground is that projects within the industry are far from being a success in this regard exhibiting substantial elapse from the intended completion period (Swan and Khalfan, 2007).
- (c) Quality Satisfaction:** is inextricably linked to meeting the client and end-users' expectation, which has steadily gained prominence in the construction business (Egan, 1998). Basically, customer satisfaction is comparison between expectations before and after realization/ delivery of the project, where the greater the negative difference, the highly it is to be displease the client and end-users. Therefore, incorporating the customer's final thoughts to deem the delivered project was gratifying or not, is very important (Forsythe, 2007).
- (d) Environmental Performance:** over the past few decades the impact infrastructure projects had on the environment has been significant to become a crucial subject of discussion. Environmental effects by the construction are resulted not only throughout the building procedure; but also, by the inputs/ items as well as engineering remedies to be deployed (Sabini, Muzio, & Alderman, 2019).
- (e) Innovation:** Construction used to be viewed as such not too-technical with limited room for novelty in comparison to other sectors (Reichstein et al., 2005). Whereas the fact could just be several issues discussed above might be an indication for lack of innovative thought and action; as a result, it has already become a success factor whose importance is ever-increasing attracting the attention of academicians and experts to engage in the study and delivery of innovative building.
- (f) Safe Work Environment:** The physical and emotional well-being of persons participating in a building project is addressed through health; whereas, safety deals with the avoidance of incidents which are likely to cause any kind of harm whether temporary, permanent or terminal. Projects are regarded safe when accounting few numbers of incidents with respect to the total hourly inputs/efforts deployed (Chan and Chan, 2004).

2.2.9 Relevant Aspects of Project Procurement

2.2.9.1 Government Policies/Legal Framework

Most nations have given public procurement constitutional standing and acknowledge it as a tool of rectifying previous discriminatory laws and practices. Some government institutions effectively implement the public procurement procedure, while others do not. Because of the multiple constraints of transforming the procurement into a procedure that is participatory and cooperative course (Sebastian, 2020), just adopting the public procurement process as codified in government regulation does not guarantee superior performance of such companies. Because procurement rules are meant to give answers to specific project demands or situations, they have a substantial effect on the result, success or not, of infrastructure projects (Ladi et al., 2015).

The procurement management policies include aspects of procurement risks and consideration on how to manage them such as determination of project costs, utilization of bidding documents and handling/arrangement for project related constraints. The process to be adopted for each project procurement activity should fit the nature and complexity of the item to be procured where decision against each success factors goes in harmony complimenting/justifying each other. Depending on the process chosen, contractual risk allocations and method of execution may vary where at this time the sector has already created various forms/arrangements and processes to deliver infrastructure projects. Balanced risk allocation should be considered with respect to the project development objectives starting the beginning while preparing the entire approach (Grace, 2019).

The overall operating context with regard to procurement to exist within a given nation shall be comprehensive encompassing wide range of circumstances, at the same time adaptable/flexible supported by worth primary/proclamation, secondary/directives, tertiary/manuals, and others, if any, legal documents to implement procurements efficiently. Authors as well as practitioners argue whether operating national context, including the existing laws, positively or negatively contributes towards the success of procurement activities. It is required for the entire legal framework, i.e., all sources for implementation and interpretation of the process starting from the primary law/proclamation to the document having the lowest precedence

level, to be simple, understandable, complimentary and potential to be applied for all possible circumstances (OECD, 2011).

2.2.9.1.1 Qualification Criteria

The competency of the chosen supplier is directly related to determine if the project is going to be success. Otherwise, employing unqualified firm very much leads to the possibility of project failure in terms of the critical factors such a time overruns, inflation of contract amount, undesirable quality, never ending contractual disagreements and possibility insolvency (Doloi, 2009). As a result, assigning suitable and competent construction firm is critical as it would be considered as determining on the fate of the project. Hence, qualifying contractors entails choosing an appropriate, if not the most appropriate, and competent firm out of the possible candidates through competitive process (Lam et al., 2001).

2.2.9.1.2 Low-Bid Evaluation Procedure

Because contractors frequently offer low to secure the work and then hunt for "extras" to gain profitability, placing a high value on the lowest bid price raises the danger of opportunism and disputes and impedes collaboration. The emphasis on low bid price raises the possibility of cost and schedule expansion as a result of several modification orders (Korczyński, 1996).

Experience has shown that considering offers that are abnormally low for award purposes could potentially jeopardize the project basically due to non-performance failing to cope up with the pilling pressure due to increment of expenditures to supply project inputs. Various institutions regard such tenders as “abnormally low tenders (ALTs)” which are likely to more than others if the client tends to substantially rely on cost to determine the successful bidder. In UK, the Public Contract Regulations 2015 (PCR) state that “Contracting authorities shall require tenderers to explain the price or costs proposed in the tender where tenders appear to be abnormally low in relation to the works, supplies or services”. The PCR further states that clients may regard bid submission non-responsive on if the rationale/justification provided by the bidders failed to adequately substantiate the offer deemed unreasonable considering the prevailing market (Mitchell and Agapiou, 2003).

Obviously awarding a contract based on a price will bring competitive advantage to the

client; but on the other hand, they will be inclined to reduce their initial offer usually arguing for putting in place novelty not just their financial, but their technical methodology as well so that they will enhance the probability of winning the bid. Moreover, having such a procedure in place would create transparency in the system by procuring entities, particularly public organizations, which can be easily supported by its policy (Ioannou, 1994). Still, authors and practitioners found that the process come with its own shortcomings as well exposing the project contract to several challenges including difficult to complete on time, variations and contract amount deviation due to claimant behaviour of contractors which is also to result in never ending disputes, above all delivery of undesirable end products (Thomas, 2009). Furthermore, relying on such a procedure may attract non-responsive bidders to submit their bids in the hope of trying their chance, and possible creating chances for unethical practices, while the competent suppliers displeased to be involved in.

In Ethiopia's current operating context, selection of bidders is to be carried out by the determination of "lowest responsive bidder". When it states "responsive", it is demanding competing firms to respond to various criteria related to eligibility, technical, financial, historical and other kinds of competencies as well as documentation requirements to demonstrate such criteria. Among the critical factors are, financial soundness & long-term profitability, annual construction turnover, general and specific experience records, performance on on-going projects/or history of pending litigation or non-performances. Since detailed requirement is to be indicated in the bidding documents to be issued to interested firms, and they are to submit their bid according the same, determining whether a given bid is responsive or not may not be troublesome. According to Shrestha (2014), "the bidder must also have the requisite judgment, skill, ability, and integrity to perform the contract according to its terms".

Despite the fact that the client is at its discretion to seek clarification and confirmation from the bidder, it all remains to the substantiation effort to be exerted in addressing all its concerns to proceed to contract formulation. In fact, failing of the bidder to responsibly/properly respond to the client's enquiries, the law makes it very difficult for buyers to make critical decisions. In fact, records show that such bidders tend to complain/report such instances to the regulatory body, i.e., FPPPA, leaving little chance for

organizations to challenge such procedure not to mention the difficult of perusing the cases since it is subject to bias due to the non-objectivity of the circumstances. On the other hand, contracts awarded while being continuous due to such issues, are not closing without leaving significant damage, definitely on the client and project end-users, and sometimes to various degrees on the contractors as well. In most countries, usually developing economies, responsiveness is on the salient bidding requirements are will be considered to supplement the award decisions; while some institution puts rigorous initial selection to screen the less-competent suppliers (Wardani et al., 2006). Such a procedure is also introduced by the World Bank in its all internationally competitive bidding processes of high-valued contracts.

2.2.9.1.3 Electronic Procurement

Without technological advancement, electronic procurement, including projects, could not be realized to incorporate each and every procuring entity and supplier/ contractor into the system. This works both ways, i.e., the technical expertise and IT infrastructure available both at the contractors' and procuring entities, needs to be clearly understood thereby proper integration is carried out prior to adopting electronic procurement (Azanlerigu & Akay, 2015).

Despite many countries are adopting the electronic procedure to be carried out in a portal replacing the previous traditional procurement hoping to benefit from its advantages, most transitions are criticized for being ineffective due to gaps, mainly lack of proper know-how to properly adopt the digital form. In order to curb such inefficiency, the capacity of officers deployed on procurement activities, in either side of the tendering process, needs built with the required technical and managerial expertise to suit the electronic procedure (Beth et al., 2003). Muguro (2014) also reflected similar stance on the importance of equipping procurement staff with the required skills/competence and enable them understand the operating contexts both on their side and the suppliers to enable them effectively interface each other while conducting procurement activities.

Ethiopia has also embarked the same introducing the electronic government procurement (e-GP) including the Ethiopian Roads Administration, among other governmental organizations, in its pilot project which is currently underway.

2.2.9.2 Planning and Quality of Procurement Documents

2.2.9.2.1 Planning

Authors could not emphasize enough on the significance of preparing proper strategy prior to commencing the actual procurement. Having a procurement strategy, in terms of detailed plan, will assist the client to determine the item/subject it wants to procure, pre-identify potentially capable & suitable suppliers, and fix delivery time/schedule of the item; all of which is critical for post-review at later stage to assess whether earlier prospects were fully realized. These would become more critical especially depending on the challenges the client would like to overcome (Meredith et al., 2017).

Apart from having a comprehensive operating context/legal framework, the planning process helps to achieve procurement efficiency/success in terms of various measurable/factors with minimized risk to the procuring entity. The overall planning process may entail engaging various parties having a stake on the matter on critical activities including, but not limited to, preparation of project requirements, market research in terms of supplier preference & market engagement, risk analysis and finally resulting a well-prepared project procurement strategy document that will help the client to meet its project development objectives (Chepngetich 2018). Furthermore, having such a strategy would also help clients define standards to be met by the contractors, forecast and mitigate forthcoming challenges, provide end-to-end roadmap, minimize impacts to be caused by risk occurrence, determine and deploy required inputs thereby the project is to be successful among various performance requirements discussed above (Steiss, 2019).

Having prepared detailed procurement strategy prior beginning the project implementation will help achieve significant benefits such as reducing project costs, optimize final delivery period, establish positive collaborative engagement from all stakeholders, also significantly reduce, including timely mitigation, of any risk that may occur at the back-end of the project lifecycle which would ultimately enhance the entire performance of the project (Cherotich, 2018). As a result, as many scholars and experienced practitioners did, he also stated that procurement planning should be a requirement before going through the solicitation process in order to avoid the various negative consequences against the success of the project.

Planning also includes estimation of the current market costs, required financial cash-flow for the smooth delivery of the project without no-interruption of resources and expected schedule of payments to be disbursed from the client's end, (Brown et al., 2017). It is also very fundamental to set up the organization, all concerned departments associated with procurement, other related to the implementation such as contract management, technical, financial, administrative support and others depending on their importance so as to support efficient execution of the project. Whether authorities are to be delegated to departments to exercise depending on their specialty, or if decisions & actions are to be taken centrally needs to duly consider the impacts it will have on the execution of the project.

2.2.9.2.2 Quality of Procurement Documents

The tender documents of a project should typically contain the design and specification of what the client wants to build. It is the same documentation that a contractor (bidders) needs to calculate and offer a price and program for a project. An experiential-based textbook on estimating and tendering in construction by Smith (1986) defines "tender documents" as "all the relevant information about the proposed contract, rules, conditions, etc. supplied to the contractor which will enable him to price the work as accurately as possible, taking into account all the special peculiarities which every building project possesses". An experiential-based textbook on theory and practice of construction tendering by Cook (1991) explains that the purpose of tender documents is "to provide each builder with common data in sufficient detail to suit the circumstances of a project". Tender documents also help to obtain competitive tenders that can be evaluated objectively to select a suitable contractor.

Tender documents typically comprise documents such as bill of quantities/schedule of rates, drawings, instructions to tenderers, specifications, form of contract, conditions of contract and a list of enclosures (Bentley, 1987).

Poor specification writing, disparities between bill of quantities and drawings and specifications, and poorly prepared tender documents are common problems associated with tender documents in the UK according to Brook (2004). Moreover, due to the high level of complexity, customization and uncertainty, construction project clients shall allocate sufficient project delivery period to enable contractors reasonably offer competitive prices

and also execute the projects in due time. Poor quality tender documents can lead to inaccurate estimates/durations, higher margins in bids, claims and disputes. A questionnaire survey of UK contactors identified “poor tender documents” as the second major cause of inaccurate cost estimates. Most respondents revealed that “...the quality of tender information provided by design teams is poor” (Akintoye and Fitzgerald, 2000). Liu and Ling (2005) identified “completeness of tender documents” as a significant factor affecting mark-up in a questionnaire study of 29 US contractors. Shash (1998) also identified “clearness of work “s specifications” as one of the factors influencing a contractor’s mark-up decision. An interview study of 30 US contractors by Neufville and King (1991) found that “quality of design” is one of the factors frequently associated with level of mark-up.

Apart from the overall quality of procurement documents, risk allocation and price adjustment schemes are found to be critical for construction project procurements.

Risk Allocation

It is critical to have risk registry and carefully analyse which contracting party is to reasonably bear such uncertainties thereby bidders are to offer competitive offers with limited amount of reserve (provisional sum amount). This will also help in lowering total life cycle cost of the project. Hence, as part of this risk allocation activity, one has to be in a position to identify which risk is to be assigned to either side of the contracting party, including the buyer. Contractors often complain that client transfers substantial share of risks towards them leaving them no chance but to reflect/incorporate same in their financial offer. To assist the same, scholars have developed different approaches outlining guidelines to allocate uncertainties in projects.

According to Lynch (2013), it is critical to give due attention to the circumstances/ situations listed hereunder whenever assigning risks:

- Identify the party having the capacity to control them;
- Identify the party in better situation to manage them;
- Identify the party capable of withstanding uncontrollable risks;
- Identify the financial implication of transferring them.

Flanagan and Norman (1993) stated that “Risk allocation strategy in construction projects is defined through the contractual arrangements. The contract is a written agreement between a client and a contractor where the liabilities and responsibilities of each party are assigned. The contract can also be defined as a trade-off between the contractor’s price for executing the project and his willingness to take the risks (Flanagan and Norman 1993).” Ultimately, the decision lies on the client to put in place a strategy which can assure that projects are to be executed meeting the development objectives effectively.

Inflation and Price Adjustment

The budget is the most important factor in every building project. Budget revisions are common in long-term projects. The major cause behind this is due to inflation resulting for the cost of various project inputs such as equipment, material, labour, increases in time; as a result, projects are most likely to exhibit increment in total project costs, yet very rarely, to be completed with a cost less than the original contract amount. By nature, especially in the past few years owing various economic instabilities due to the geopolitics, outbreak of COVID and many other factors, the cost of construction inputs are becoming erratic, in the process impacting the economic growth of several nations. The impact of such erratic behaviour of the global market is of various forms including disruption of the supply chain, instability of the labour market and indices related to consumer. Owing to the complexity of the sector, inflation associated with construction is very much different from other sectors; and also differs from place to place where some are to be highly impacted; while others having weak economy to withstand the impact. Yet, despite such mounting challenge, normally being one of the economic drives of any given nation, there is no choice but to keep on investing large sum of money on these infrastructure projects. Nevertheless, the severe nature of inflation in the current situation is forcing clients, sometimes contracting parties, to postpone projects to avoid swimming in never ending financial debacle due to escalations that are now seeming unpredictable (Musarat et al., 2021).

The purchaser should consider how price adjustment mechanisms will be addressed in the most appropriate manner based on the outcome of market research analysis as well the furnished cost estimation which should provide the information needed to establish cost

trends and drivers in the market as well as an assessment on the business environment of the sectors in local contexts. Purchasers should use this information to justify the selection of the appropriate price adjustment mechanism which is also highly related to risk allocation to result competitive tendering and project delivery (Buchan et al., 2003).

According to the various version of the widely practices and reputed conditions of contract for civil works, i.e., Fédération Internationale des Ingénieurs Conseils (FIDIC), for instance Clause 70.1 of 1992 version states *“There shall be added to or deducted from the contract price such sums in respect of rise or fall in the cost of labour and/or materials or any other matters affecting the cost of the execution of the Works as may be determined in accordance with Part II of these conditions, i.e., the special provisions to be indicated by the project procuring entity.”* Such a provision is also adopted on the Standard Bidding Document of Ethiopia issued by FPPPA. However, it is contentious whether such price adjustment schemes are full compensations for the inflation.

2.2.9.3 Process Efficiency and Reputation

There are various factors affecting the process efficiency of a given procurement system. One of the parameters is the overall bid process time. In the road construction, procurement of most African countries is inefficient where it takes from 2-3 months to nearly a year to conclude the procurement of a given road project. Lengthy evaluation process is clearly a matter of concern because it would inflate the procurement costs and reduce the transparency of the process (Alexeeva et al., 2008).

Table 1: Average Time required to Sign Road Contract in African Countries

	Avg. Time (Days)
Democratic Rep. of Congo	71.2
Madagascar	88.8
Ghana	153.1
Zambia	187.9
Mozambique	220.6
Tanzania	253.7
Malawi	261.5
Uganda	326.3
Kenya	348.0

Source: Alexeeva et al. (2008)

Lack of competition is one of the major concerns of in construction project procurements. Study shows that the average number of bidders for healthy competition is about six per tender. On the other hand, according to De Neufville et al. (1977), there is an inverse relation between the availability of projects and competition intensity (number of bidders) and interestingly, they found that the average number of bidders remaining constant implying that contractors anticipate future conditions in deciding whether to bid or not. Thorpe and McCaffer (1991) regard market conditions as all-embracing subjective terms which on a macro-industry level include such factors as the total construction order for all type of work whilst on a macro-company level includes local, national and international construction opportunities. In addition, the number of bidders and competitiveness is largely determined by the clients' choice of procurement method which in turn determines the type of competition within a construction market (Hillebrandt, 2000).

According to Hong & Shum (2002), several factors such as the bidding requirement, perception towards the client, need for work, probability of winning, number of bidders, the accuracy of the estimate, information disclosed, influence a contractor's participation in bid and bid awarded price.

Procurement guidelines adopted by most countries stipulates the importance granting sufficient time for firms to prepare sound bids. By doing so, even inexperienced contractors are allowed to consider participating in tender, thereby intensifying competition in the market. Of particular note, the extension of the bid preparation period is a no-cost measure for procurers (Benamghar & Iimi, 2011).

Apart from internal efficiency, prior to solicitation, as part of their market assessment, clients should carryout supplier preference, i.e., identify and describe how contractors will take to working with them. To determine the accuracy of the assessment, the client/purchaser should consider real experience in how suppliers respond to bids, the level of success and how suppliers react when there are implementation problems – this serves as a general proxy to assess how important the purchaser is to that contractor as a customer. Procuring entities should identify how contractors view them as a customer and depending on which view, it could be understood how the supplier is likely to behave, i.e., determining how attractive the

procuring entity is as a customer to the contractors. This in turn will determine the level of willingness or reluctance the supplier will exhibit in wanting to bid for work and the corresponding level of effort the contractor will make in meeting the client's requirements. There are various parameters which impacts the perception/reputability of the client such as its behaviour on on-going projects such disbursement of payments, transparency and fairness in making decisions on contract administration like claims & disputes, also its reputability during initial procurement activities such as tender floating, evaluation procedure (Thorpe and McCaffer, 1991; the World Bank, 2016).

Based on such contractor's perception, the client will determine the extent that it shall influence a market, through its procurement approach, to achieve the objectives of the procurement. Understanding this dynamic, and how it can be changed to get the right, motivated contractor is critical in ensuring a successful procurement result. The mere value of a contract does not in itself make procurement or a client attractive to a potential bidder. Rather, the whole package of value, coupled with client's behaviour, experience on other construction contracts, informs how the contractor is likely to react (Buchan et al., 2003). Understanding such perception of bidders on the sector allows the client to establish the factors listed below and design a procurement approach to maximize market interest, and actual participation in the procurement:

- a. *What are the changes the client should take to be more attractive to the bidders?*
- b. *How to encourage the bidders to participate on tenders and provide a good solution to meet the Client's requirements?*
- c. *How to engage with the market to optimize the level of contractors' participation in a bidding process?*

2.2.9.4 Competency and Professionalism

Procurement process, especially public procurements, are notable for the expenditure of significant amount of funds/money derived from various sources intended for specific project development objectives (Plantinga et al., 2020). Several firms lack the personnel required to effectively handle the entire procurement procedure. To this effect, firms had to make

substantial expenditure towards capability building schemes as human resources require having exposure on off-work trainings and visits/workshops, apart from internal coaching and mentoring programs, to develop themselves and then have a return towards organizational efficiency (Karttunen, 2018). Furthermore, studies suggest that equipping staff with several set of competencies needs to be actively cultivated. As a result, all staff requires upgrading their educational level and took various short-term trainings in an extensive and on-going manner. Due to the absence of defined accountability measures, there are organizations expending in contrary to the basic procurement principles.

Public procurement professionals must endeavour to achieve ethical behaviour both in their actions and associations to ensure that organizational purchasing and supplies processes are efficient and successful. The avoidance of unethical and uncouth procurement practices ensures that organizational purchasing needs are properly addressed. Besides, efficiency and cost savings are attained through the elimination of ghost procurement transactions. The adoption of ethical behaviour during tasks execution ensures that firms obtain value for their money, economy, efficiency and effectiveness during goods and services replenishment (Wamba-Taguimdje et al., 2020). The presence of unethical procurement behaviour poses great and constant risks for organizations procurement; hence, to enhance optimal productivity of their procurement function, they need to proactively adopt and vigorously implement codes of conduct.

Procurement officers are required to have the required set of skills and character to handle complicated procedures when conducting project procurement activities. Such competencies will help the employees deliver procurements meticulously applying necessary due diligence. Furthermore, since they are required to follow set of ethical standards related to procurement while executing their activities, enhancing their know-how enable them be alerted of these situations will help them accomplish the procurement activities with higher performance.

2.3. Empirical Literature

Study shows that digitizing the procurement via electronic means has been a challenge in many countries due to various reasons. Among the factors, ICT-related problems are found to be more challenging in the case of Ghana; although factors related to the organization,

employees and suppliers also contribute to smooth operation of the e-procurement. As a result, Salifu et al. (2003), recommended for institutions shall give prior attention towards the enhancement of ICT infrastructures to meet the technical demands to properly implement the electronic procurement.

Adhering to procurement ethics is believed to significantly boost procurement performance including avoidance of conflict of interest which otherwise could potentially compromise the decision-making by all personnel related with the activities. In order to help this, providing professional training to the procurement officers as well as strict compliance with government regulations is to offer significant bearing (Sikolia and Muthini, 2019).

The role of project procurement for successful construction project procurement in Nigeria has been studied by Anyanwu et al. (2021). The study supported the relevance of having procurement personnel equipped with both the technical and soft knowledge to effective implementation of projects; and the significant impact procurement have on the same. Moreover, the research confirms the perfect integration between the project management process from planning to close out of procurement; as well as positive impact of project management process in the efficiency of bid evaluation, design, quality performance evaluation, and proper selection sub-contractors.

Chepkesis et al. (2018) makes a study on the effect of procurement planning on suppliers' performance in Kenya's Moi University which reveals the significant impact of preparing a strategy shown in the improvement of project delivery on the vendors' side. As already established by other scholars, their research also supports the advantages of detailed planning to result efficient procurement ticking all the right boxes to regard a given project is a success. This also includes installing innovating approaches and creativity to tackle any challenges during the implementation the projects. As a result, it is recommended for procuring entities to carry out a strategy as a routine activity so that the benefits are to be realized. Nevertheless, such study was not conducted addressing the construction project procurement processes.

Aimable et al. (2019) investigated the effect of procurement planning on value for money among selected districts in Southern Province, Rwanda. The study revealed that procurement

planning, particularly packaging, has the benefit of serving suppliers with various lots/contracts for them to choose those activities suitable considering their interest, capacity, resources and other constraints. Evidently, all approaches of procurement are design to suit specific conditions including the nature/complexity of the item to be procured, market conditions, buyers and suppliers' situations; hence, choosing an appropriate selection technique accounting these conditions is confirmed to substantially result in timely delivery including money to be well spent. Chigudu, (2014) in his study of Issues and Challenge in Zimbabwe Procurement, reveals the following challenges in procurement: (1) absence of ambition and attention from governance, (2) shortage of the required competencies and skills, (3) problematic procurement directives, and (4): absence of accountability and legal enforcement.

Palmer and Butt (1985), also studies the challenges for efficient procurement. Their study identified that incompetency of organizations tasked with overseeing & regulating procurements, influence of the government, normative/traditional practices, little attention to the capacity buildings to be the most significant ones to be addressed by any nation to attain value for money. Studies showed that in developing countries, such as Africa, governments tend to intervene in decision makings hindering the performance of project execution including procurement procedures. These interferences include imposing on procuring entities to give contracts to persons or firms of their preference. (Dza and Gapp, 2013)

In the case of Ethiopia, W/Tensay (2008) chose the "Ethiopian Sugar Corporation" to study their procedures when procuring projects and found that inefficiency of project execution where several stakeholders, including the main contractor, subcontractors, consultants and procurement staffs, which also resulted in low quality of project work to be performed. Such result is also attributed by lack of experience and knowledge in similar project as there was prior recent practice in selecting service providers to use appropriate qualification requirements to screen the suppliers. Similarly, Assefa (2014) found that there is poor record keeping, lack of systematic planning, and lack of equipped personnel in the public procurement process carried out by the Ministry of Education.

2.4 Literature Summary and Research Gaps

The navigated literature proves the existence of position association of performance of a project and procurement procedure. All these studies affirm that the construction industry should embrace effective construction contract procurement process to deliver quality products where all concerned parties having a stake will be satisfied including the public entity/government, end-users, and others.

Despite several studies being carried out on the project procurement practices of several institutions in the context of our country, their approach is limited to the entire project procurement management process proposed by the PMI in its PMBOK; where little attention is given on dissecting the initial project procurement practices and associated challenges. The conceptual framework of these studies heavily relies on the PMBOK process from planning to closing out of a contract.

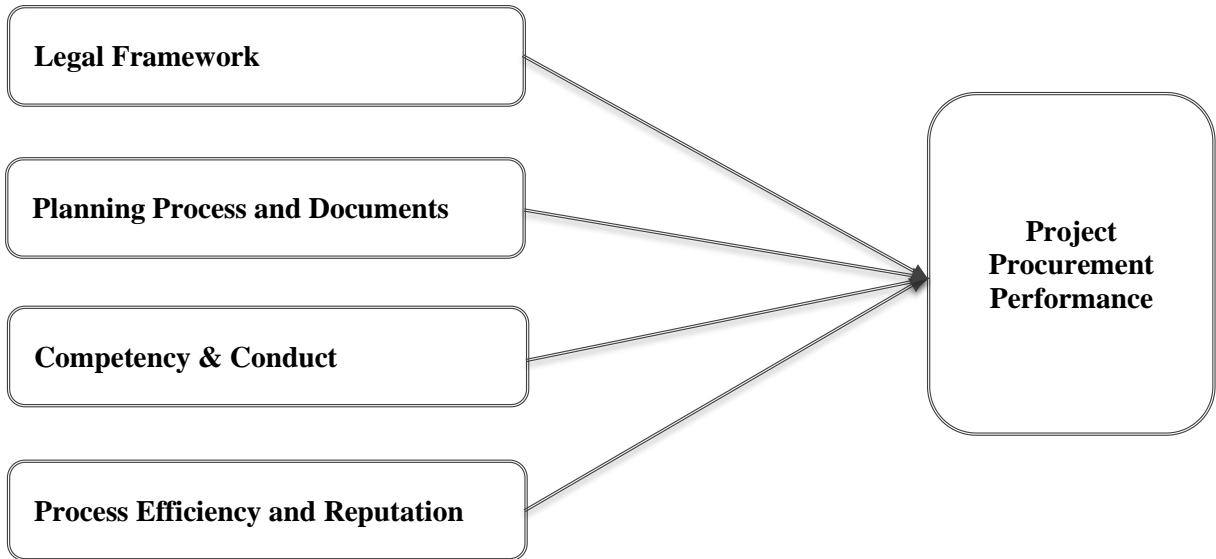
Furthermore, as evidenced from other studies found from the AAU Institutional Repository on the project procurement practices of various organizations; their scope of coverage is limited due to their customer profile owing to the limited number of projects and also geographical coverage not to mention lacking to address the variables which are interest to this study. When it comes to this case study on the specific project procurement practices and challenges on the Federal Ethiopian Roads Administration is not covered in earlier studies and as per the information gathered from the organization.

2.5 Conceptual Framework

A framework used to conceptualize the relationship between the relevant variables to the subject study based on broad ideas, principles and knowledge areas developed from relevant fields; and also, enquiries through investigative process to address contemporary issues of the organization is presented to structure the subsequent presentation.

Nevertheless, unlike previous studies which are inclined to address subject matters using the PMBOK work process of project procurement management, the conceptual framework has been adopted giving particular attention to the initial procurement process, i.e., till the award of the contracts.

Figure 4: Conceptual Framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes the methodology that is used to carry out this study. It comprises the research design, population and sampling strategy, the data collection procedures, the source of data, the instruments used for gathering data, data analysis, issues related to validity and reliability, and ethics and the statistical techniques used to analyse the data will be discussed.

3.2. Research Design

This research is intended to clearly identify the project procurement processes and challenges in implementing road infrastructure projects in particular for the Ethiopian Roads Administration. Therefore, the study design is a descriptive type. The approach followed for this research is a mixed approach where both qualitative and quantitative methods are used. Qualitative & quantitative approaches are employed and data will be collected through interview and using questionnaires from the project manager procurement director, procurement staff and project staffs. Both primary and secondary data used as a source and utilized for purposes of addressing the research objectives. Secondary data was gathered from websites, journals, brochures, books and other documents.

3.3. Research Approach

The plan used to find problematic areas to be addressed in the study is conducted through compilation of various sources of materials/ literature initially carrying out unorganized review of the pertaining records supplemented by continuously engaging with expertise of the road construction sector to articulate appropriate investigative technique of the relevant issues.

Later, after gathering preliminary concepts from unstructured literature review and suggestion of expertise, means of collecting the required materials for detailed review is investigated towards the approach. This helped in determining tools for investigation; and

identifying those relevant and accessible records and materials for detailed review. Mostly, internet sources are used to review and examine relevant resources which consist of books, mainly of project management, journals and articles published by scholars; performance records, status & annual reports and others of the institution subject for this study, i.e., ERA.

Owing the benefit of having opinions of experts on the sector to address issues and respond to variables relevant to the study posed by the research question, it is found appropriate to have qualitative method of researching. This has been conducted in different stages; where in the first step, as discussed above, the general perception of experts and practitioners were gathered with regard to project procurement practices & challenges and impact of those relevant variables identified during literature review are evaluated.

Then, the compiled materials are reviewed in detail to identify variables suitable for the study as a means of officially gathering expertise opinion from the main stakeholders engaged in the construction of federal road projects.

3.4. Sample Design

All three major parties having direct relation and stake on federal highway construction are considered to estimate the population of this research. Due care is taken so that participants invited for the study can be considered as representatives of the general population. With the aim of enhancing the quality and authenticity of findings, respected practitioners and experts of the sector are invited to give their professional opinion. List of contracting parties engaged on design, construction and supervision activities relevant to the study are to be taken from ERA's company profile.

Due to the size of the population and limitation of resources, it is required to limit the number of participants in the study; such technique of selecting is referred as sampling. Sampling will help represent the population in scaled-down portion chosen for detailed assessment.

Respondents expected to participate in the survey are client staff, contractors, and consultants. ERA's senior professionals involved in the project management operate under six different directorates; whereas the sample of contractors and consultants are to be selected among those who had/have working relation with the ERA. The number of

contractors, consultants and project management professionals involved in road construction projects as per ERA internal record are shown below:

Table 2: Target Population

Party	Number	Remark
ERA/Client	48 Senior Staff	Only those Seniors Staffs involved in Construction Project Management are to be Considered for the Study
Contractor	53 Firms	Only those engaged in Construction Projects of GC-1 or RC-1 Category are Selected
Consultant	51 Firms	Only those engaged in Design/Supervision of Road Construction Projects of Category/Level I are Considered

Sample Technique and Sample Size Determination

Besides the determination of the sample size, as discussed above, in order to have opinions of experienced experts who are believed to provide suitable and valuable responses and suggestions, and with the aim of supplementing the study with cases identified from ERA’s internal record since there is only very much available resources, purposive sampling has been employed (Palinkas et al., 2015). In relation, Khotari (2004) states “...purposive sampling is considered more appropriate when the universe happens to be small and a known characteristic of it is to be studied intensively.”

Determining Sample Size: This will be determined by various factors so that it can be considered appropriate meeting all criteria including being truly representative, resulting in sampling margin of error, able to regulate systematic bias and also assuring that the outcome of the survey could be applied on the entire population with sufficient confidence level (Kothari, 2004). Hence, determining the size will depend on the types of the universe, study, and resources at disposal. The subject study has used the following equation to calculate the sample size (n):

$$n = N / (1+N(e^2)) \dots\dots\dots[\text{Eq. 3.1}]$$

Where n=recommended sample size

N=the entire universe

e=confidence level/ error margin (0.05) at 0.95(95%) confidence

From the above formula, the sample size for this study is from each party is calculated as follows:

a) Client/ ERA Staff

$$n = 48 / (1 + 48 (0.05)^2)$$

$$n = 36.923$$

$$n = 37$$

b) Contractor

$$n = 53 / (1 + 53 (0.05)^2)$$

$$n = 40.769$$

$$n = 41$$

c) Consultant

$$n = 51 / (1 + 51 (0.05)^2)$$

$$n = 39.230$$

$$n = 40$$

Hence, the required sample for this study is 37 Staff; 41 contractors and 40 consultants from all interested and concerned three parties.

3.5. Research Instruments (Sources of Data)

The researcher employed both primary and secondary data sources to get relevant information for this investigation.

3.5.1 Primary Data Sources

The primary sources are original data gathered from ERA Staff, Contractors and Consultants who are directly involved as primary stakeholder in the project procurement process.

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 three parts. The first part includes questions about general background information about the respondents like demographic profiles, i.e., name of the organization, contracting party, educational level, professional work experience of the respondents; and level of awareness and familiarity to the existing project procurement procedures of the country and ERA. The second part of the questionnaires is about project procurement practices of ERA which are adapted from factors that have an effect the process based on the theoretical and empirical literatures. The questionnaires are closed ended and comprises 40 measurement items of project procurement management practices which are grouped into four groups and each item is rated by a five-point Likert scale ranked from strongly disagree to strongly agree. The third part of the questionnaires consists of general questions concerning general opinion about project procurement management in ERA organization.

3.5.2 Sources Data Sources

Any data that were acquired from any written document (websites, the bank's annual report, books, and published journals) is considered a secondary source of data. Review of previous findings and conclusions are also linked to the topic in order to strengthen the subject study's results and findings. This allows examining what other people said about the issue, as well as how their results and recommendations relate to the research being doing.

To supplement professional opinions on some indicators and to understand the operating context on the identified important aspects/variables in the project management of ERA, its archives were referred to collect various relevant records like procurement completion reports and annual procurement records (KPI reports) reported to the Federal Public Procurement Authority.

Detail examination of existing literatures helped to identify major success factors/ indicators of procurements at different stages, understood concepts of procurement management, identify relevant issues having an impact on project procurement practice are carried out where emphasis is given on those identified variables.

3.6. Data Analysis and Interpretation

Outcome of the survey are assessed in detail thereby the conclusions and suggestions are supported by with reasonable level of confidence. Statistical examination has been made calculating the medians, mean and modes of for each variable and individual question which is more appropriate for such Likert scale data collection.

This is later followed by thorough discussions to draw a conclusion and to forward recommendations based on the findings of the study.

The statistical methodology is a way of analysis that offers a broad picture of the outcomes. To examine the results of several questions, a frequency distribution will be employed, which illustrates the frequency of observation of each response to each variable under consideration.

The analysis would provide the perceived effectiveness of project procurement methods and their influence on ERA's projects using a rating scale, with participants rating the importance of research variables on a five-point scale.

3.7. Validity and Reliability

3.7.1 Reliability Test

Before going to analyse the data, initially the reliability of the contract management practices variables is checked. According to Tavakol (2011), “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”. 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 the Table below displaying that the Cronbach’s Alpha coefficients for the project procurement practices range from 0.89 to 0.91. Since for the measuring instrument to be reliable, it’s Cronbach’s Alpha value should be minimum 0.70. Values for all questions are found to be higher than above 0.70 which makes the measurement instrument very reliable.

Table 3: Reliability Statistics

Cronbach Alpha	Std. Alpha	No. of Items (N)
0.9043	0.9048	40

Source: Wessa, P. (2023), Free Statistics Software, Office for Research Development and Education, version 1.2.1, URL <https://www.wessa.net/>

3.7.2 Validity Test

Hair et al. (2014) states “validity is 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 project procurement.

The content validity of an instrument is good if it has a representative sample of the universe. Most of its decisions are made based on judgment and intuition. It can also be determined by a panel of people who will judge how well the measuring device fits the standards, but there is no way to express it numerically. The content validity was provided for experts review and feedback engaged from all three stakeholders who have similar exposure and experience on the federal road project procurement to result a consistent and valid data. Furthermore, most of the questionnaires are adapted from various literatures referred in this chapter which proved the validity of the questionnaire; and also, other studies in the local context carried out modifying such previous works.

3.8. Ethical Consideration

Only interested participants who have willingly given their consent are encouraged to take part in the research process. Considering the methodology of the research, participants are not expected to suffer from any physical harm; nonetheless, in the questionnaire to be provided, they will clearly be notified, upfront, right not to disclose their personal information. Participants will not be identified in the findings of the survey and shall remain anonymous.

Furthermore, all participants will be briefed about the intention of the research and scope involved in the process. Also, since the potential participants are interested in the outcome of the questionnaire as well as the study in general, the outcome of the same will be properly informed/ communicated.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

In this section of the report, the survey process would be described in terms of various aspects beginning the distribution of questionnaire, rate of response and composition, in terms of background and qualification, of respondents from each stakeholder.

The main objective is to assess the existing procurement practices of the Ethiopian Roads Administration against the knowledge, law, best practices, identify gaps & challenges and means to address the same.

To address the fundamental research question, it is found relevant to seek opinion of experts engaged on the sector from either side of the contracting parties in the form of survey questionnaire prepared for this specific purpose after compressive desk study, literature review and intellectual engagement with professionals in the sector.

The questionnaire has been distributed to ninety-eight (98) individuals to all three stakeholders; out of which, it is managed to collect responses from seventy-six (76) details of which are shown in subsequent section of this report. *Questionnaire distributed to study participants is enclosed as Appendix A to this report.*

4.2. Respondents Profile

The total response rate is 78% a detail of which is shown in the table below:

Table 4: Survey Response

Group	Number of Questionnaire Distributed	Number of Questionnaire Returned	Percentage of Response / Return (%)
Client (ERA)	36	32	89%
Consultants	32	24	75%
Contractors	30	20	67%
Total	98	76	78%

Source: Own Survey Data, 2023

Examining the background of respondents to the study is important to support, or identify if there a need to make additional survey, the outcome of the responses. This is basically background data such as education status, field of specialization & work experience and awareness on the project procurement process.

Table 5: Respondent's Profile

Demography/ Group		Client (ERA) (%age)	Consultant (%age)	Contractor (%age)
Education	Diploma	0%	0%	0%
	B.Sc.	37%	50%	80%
	M.Sc.	63%	50%	20%
	Total	100%	100%	100%
Experience	0-5 Years	0%	8%	30%
	5-10 Years	19%	17%	30%
	> 10 Years	81%	85%	50%
	Total	100%	100%	100%
Awareness of Procurement Procedures	Directive	90%	83%	100%
	FPPA SBD	90%	83%	100%
	ERA SBD	100%	100%	100%

Source: Own Survey Data, 2023

As shown in the table, 37% and 63% of the client's respondents hold a first degree and second degree, respectively. On the consultant side 50% have attained bachelor graduating from higher institution while the other half, i.e., 50% hold second degree. Whereas only 20% of the contractor's respondents hold second degree, while the remaining 80% are first degree graduates. When it comes to work experience, the contractor respondents 50% of them have 5-10 years of construction experience whereas the remaining 50% are very seniors accumulating an experience more than a decade related to project management in the sector. From the consultant side, 8% of the respondents have 0-5 years' experience, 17% of the respondents have 6-10 years of work experience while the remaining 75% respondents have greater than 10 years of related experience. From the client, 81% of the respondents have more than 10 years of experience whereas the remaining 19% have 6-10 years of related experience. The data showed that the information collected is mainly from experienced

professionals from the sector. It is noted that substantially all respondents are aware of the existing procurement procedures; particularly 100% respondents from the client side have knowledge of the FPPPA’s Procurement Procedure, its Standard Bidding Documents as well as ERA’s Standard Bidding and RFP Documents. While only a mere 17% of the consultant’s and 10% of the contractor’s respondents are not accustomed with FPPP’s Bidding Procedures as well as its Standard Bidding Documents; but have sufficient knowledge about ERA’s Standard Procurement Documents to consider they response relevant.

4.3. Descriptive Analysis

Analysis is discussed hereunder for each variable in separate sub-sections accompanied by summary table of the mean scores followed by line graph plotted against individual query using the mean scores of the stakeholders and interpretation of the results.

4.3.1 Planning and Quality of Procurement Documents

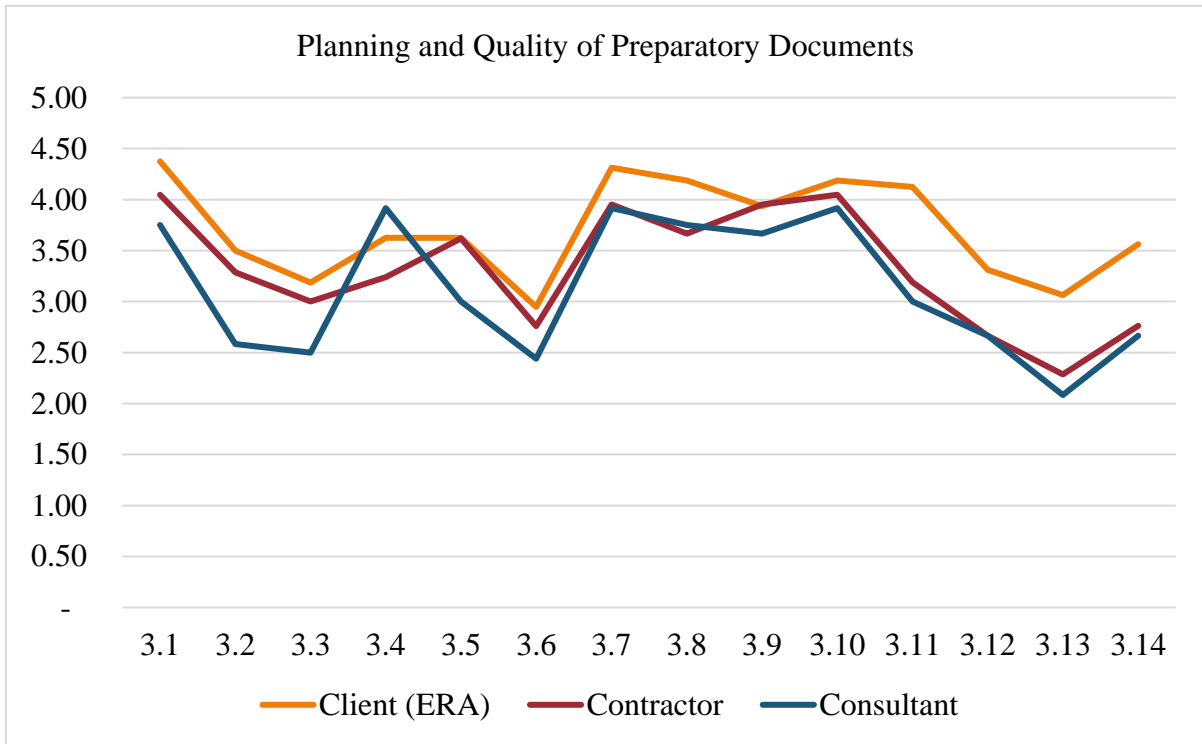
Stakeholders’ response on each aspect to the subject matter is summarized in the table below:

Table 6: Mean Scores on Planning and Quality of Procurement Documents

N=78	Mean Scores			
Question	Client (ERA)	Contractor	Consultant	Aggregate Score
3.1	4.38	4.05	3.75	4.06
3.2	3.50	3.29	2.58	3.00
3.3	3.19	3.00	2.50	2.90
3.4	3.63	3.24	3.92	3.59
3.5	3.63	3.62	3.00	3.41
3.6	2.95	2.76	2.44	2.90
3.7	4.31	3.95	3.92	4.06
3.8	4.19	3.67	3.75	3.87
3.9	3.94	3.95	3.67	3.85
3.10	4.19	4.05	3.92	4.05
3.11	4.13	3.19	3.00	3.44
3.12	3.31	2.67	2.67	2.88
3.13	3.06	2.29	2.08	2.48
3.14	3.56	2.76	2.67	3.00
Average Mean	3.71	3.32	3.13	3.39

Source: Own Survey Data, 2023

Figure 5: Planning and Quality of Procurement Documents



Source: Own Survey Data, 2023

As it is depicted from the chart above, based on the mean score of the Likert scale, there appears to be consistent trend in the respondents of the three parties; where the client in almost all cases have the upper hand of agreement to the existing practice regarding its standard bidding documents which is understandable. Whereas respondents from the contractor and consultant side have scored seemingly proportional level of agreement/ disagreement on almost each surveyed subject of project procurement practices. However, the level of disagreement between the Client and its partners is wider for some measurable.

Overall, there is a general consensus among all stakeholders that ERA is conducting its project procurement practices in line with the existing laws, proclamation, directive, manuals and standard documents, of the country supported by some planning activities and relatively adequate quality of procurement documents. Particularly, in line with the recommendation of Liu and Ling (2005), ERA has installed a system where it furnishes procurement documents in which the clarity of its technical/ contractual and tender documentation requirements,

fairness of the qualification, sufficient of tender floating period to enhance the performance of project procurements. However, the result shows the existing the following gaps on ERA's project procurement practices with respect to its planning and procurement documents:

- The results showed that planning process at the early stage of project procurement activities, particularly initiation, project selection, designing, are not sufficient to result effective procurement. Insufficiency of the planning also seems to be supplemented by inadequate market assessment which makes it difficult for ERA to pre-identify the challenges and prepare a strategy to overcome them based on the study of Meredith et al. (2017). Such a result is particularly demonstrated by the outcome of the survey from the Consultants which is worthy of considering as they have more involvement in the development of projects. As noted by Mbula and Wainaina (2022), the procurement planning should include a comprehensive, assessing & incorporating the needs of end users and stakeholders in to the project design and procurement arrangements, enables procurement arrangement to be more appropriate to the contract being procured, result in effective contract implementation, and reduces end-to-end process time.
- Furthermore, current practices suggest incompatibility between the contract durations given by the client to deliver the project with respect to the respective complexity, level of customization and uncertainties/risks associated required to complete the projects in due time (Brook, 2004).
- Moreover, the level of disagreement, by contractors (72%) and Consultants (67%), shows that the existing price adjustment scheme do not fairly compensate ERA's contracting parties. The respondents are of the opinion that the existing scheme is not justified by the establishment of proposer cost trends and drivers as outcome of the market analysis; and there is a reservation that the standard procurement documents and cost estimation prepared/approved by the client are not sufficient to back up the prevailing conditions, i.e., business environment of the construction industry in the country (Buchan et al., 2003).

- Above all, despite furnishing relatively more quality procurement documents, the result showed risks in its procurement documents are unfairly transferred to the party incapable of withstanding the risks (Lynch, 2013). Risk allocation is related to other decisions made on the procurement documents, including the price adjustment scheme discussed above, and also the project delivery method which is challenged by higher degree of disagreement among ERA’s stakeholders for pushing the Design-Build delivery method on most projects despite the advantages of the Design-Bid-Build delivery method for accommodating changes during implementation of the project, insufficient tendering period to carryout detail investigation, and also placing relatively higher amount risks for the private sector to bear (Gransberg and Maraqa, 2002; Lynch, 2013)

4.3.2 ERA’s Process Efficiency and Reputation

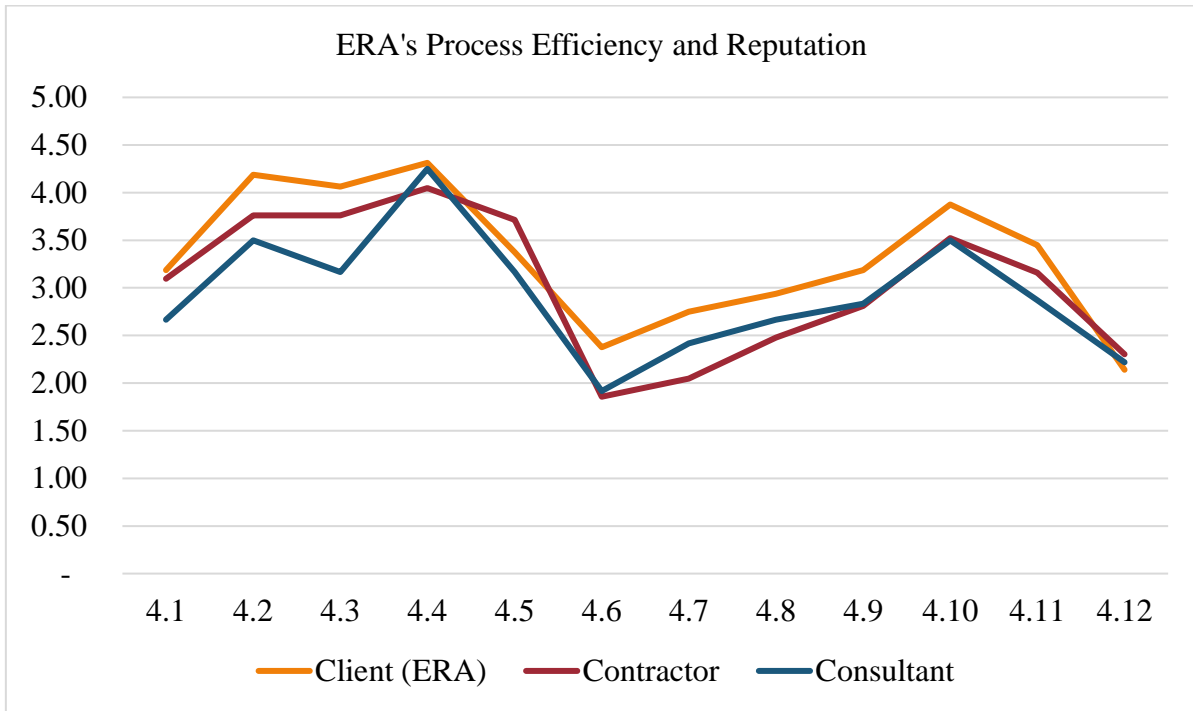
The analysis result of collected primary data collected is shown below:

Table 7: Mean Scores on Process Efficiency and Reputation

N=78	Mean Scores			
Question	Client (ERA)	Contractor	Consultant	Aggregate Score
4.1	3.19	3.10	2.67	2.98
4.2	4.19	3.76	3.50	3.82
4.3	4.06	3.76	3.17	3.66
4.4	4.31	4.05	4.25	4.20
4.5	3.88	3.52	3.50	3.63
4.6	3.45	3.16	2.87	3.15
4.7	3.31	3.29	3.83	3.48
4.8	3.38	3.71	3.17	3.42
4.9	2.38	1.86	1.92	2.05
4.10	2.75	2.05	2.42	2.40
4.11	2.94	2.48	2.67	2.69
4.12	3.19	2.81	2.83	2.94
Average Mean	3.42	3.13	3.07	3.20

Source: Own Survey Data, 2023

Figure 6: ERA's Process Efficiency and Reputation



Source: Own Survey Data, 2023

The analysis shows similar level of consistency trend in the responses from the three parties based on the chart drawing using the mean score of the Likert scale as shown above. There is higher degree of agreement by the Client staff considering the existing practice when it comes to process efficiency and its reputability. Meanwhile, respondents from the contractor and consultant side have scored seemingly proportional level of disagreement on almost each surveyed subject of project procurement practice exhibiting variables ranges of deviation between the client and its stakeholders on some sub-factors.

The mean scores implies that the current project procurement practices there is high level of confidences on ERA's operating when it comes to transparency of the process where there is a relatively higher degree of confidence by the stakeholders on the handling of procurement issues and complaints with fairness and transparency which is verifies the existence of conducive ground to maintain the existing good-practices and at the same time improve on those aspects where it lacks as it is one of the fundamental project procurement principles when purchased by government entity according to Deighton-Smith (2004). This also

includes the dissemination of information and evaluation procedures conducted by the office; and there is slight reflection that ERA tries to bring its stakeholders on-board to create collaborative relation to some degree. On the other hand, however, the response shows the existence of critical gaps on the ERA's procurement efficiency and reputability when in relation to project procurement practices:

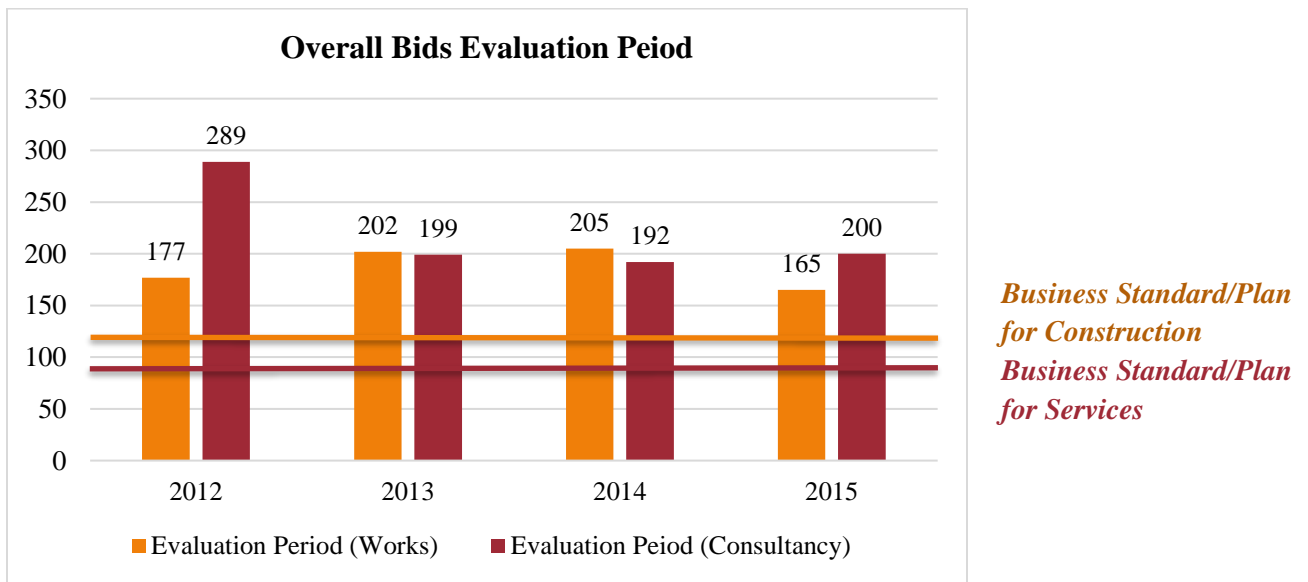
- There appears to be some degree of lengthy process to timely complete the evaluation and overall bid process of construction projects which needs to be concerned with as it impacts procurement costs and to some degree impact the transparency of its process (Alexeeva et al., 2008).
- Most importantly, there is a grave concern by all parties on ERA reputability and efficiency with respect to making decision on time on on-going projects. This also includes the late disbursement of payments towards projects under implementation. The disagreement score for these parameters is found alarming as it impacts the interest and perception of capable contractors to participate on ERA tenders (Thorpe and McCaffer, 1991).
- Although it is early to completely judge its final impact, the mean scores demonstrate the high degree of repletion towards the newly introduced electronic government procurement. The current consensus is the portal is not sufficient to support the complex operation of construction project procurement activities/processes unlike that of the federal public procurement authority reports it to be a success on entities solely carrying out goods procurement. Such result is an early indicator of the ineffective transitions failing to grasp the benefits/advantages due to basic gaps in adapting/ developing the system similar to that of other procurement activities (Beth et al., 2003).
- Finally, the result shows insufficient level of collaboration among stakeholders due to some limitation on the engagement of contractors and consultants to take advantage of partnership relation. Engaging the market, i.e., contracting parties should help establish the marketplace's ability to meet the client's requirements, provide ideas on alternative approaches for meeting the requirements, highlight potential risks early in

the Project Cycle, and provide an insight into likely marketplace interest. Simply, it can also motivate the right contractors to bid. This information should then be used to develop a procurement approach that manages risk in the right way for everyone, is overall more attractive to the marketplace, generates greater competition, and ultimately maximizes the opportunities to meet the client’s objectives. (Korczynski, 1996).

Moreover, ERA’s Process efficiency is further demonstrated based on secondary data collected from its Engineering Procurement Achieve (2009 – 2015 EFY) as discussed hereunder:

Analysis Results of Secondary Data

Figure 7: Evaluation Period in the Existing Project Procurement Practice



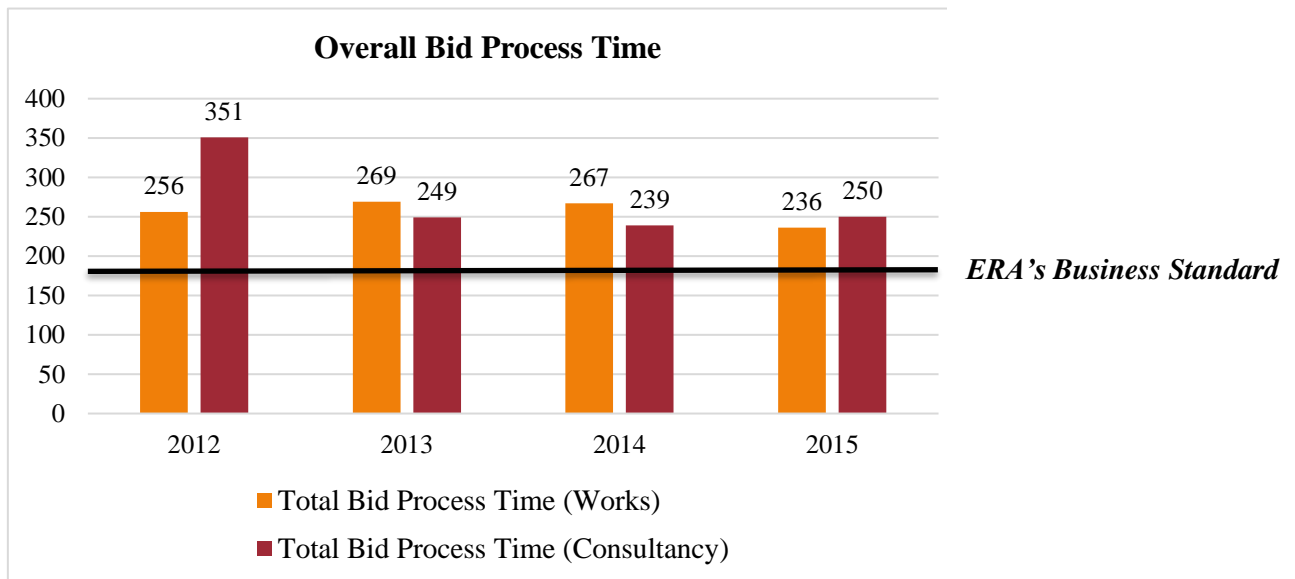
Source: ERA Annual Procurement Report to FPPPA (2012-2015)

Assessment has been made on the pertinent variables of process efficiency in terms of average bid evaluation period and overall bid-process time. Based on the official annual project procurement reports of the past four years data addressed to the FPPPA where the Key Performance Indicators (KPI) have been calculated based on the milestones of all projects to study the efficiency of the existing practice. As it can be presented in the figures

below, the actual evaluation period and overall bidding process time taken during project procurement of both construction and consultancy/service projects is higher than the business standard of the Administration.

To be more specific, the evaluation of construction projects has taken 48%, 68%, 71% and 38% more than the business standard during project procurements carried out from 2012 to 2015 EFYs. ERA was expected to finalize bid evaluation of these projects within 120 Days as per its business standard. Likewise, the service project procurements have taken 221%, 121%, 113% and 122% more than the business standard within the past four years while they should have been delivered within 90 Days.

Figure 8: Overall Bidding Process Time in the Existing Project Procurement Practice

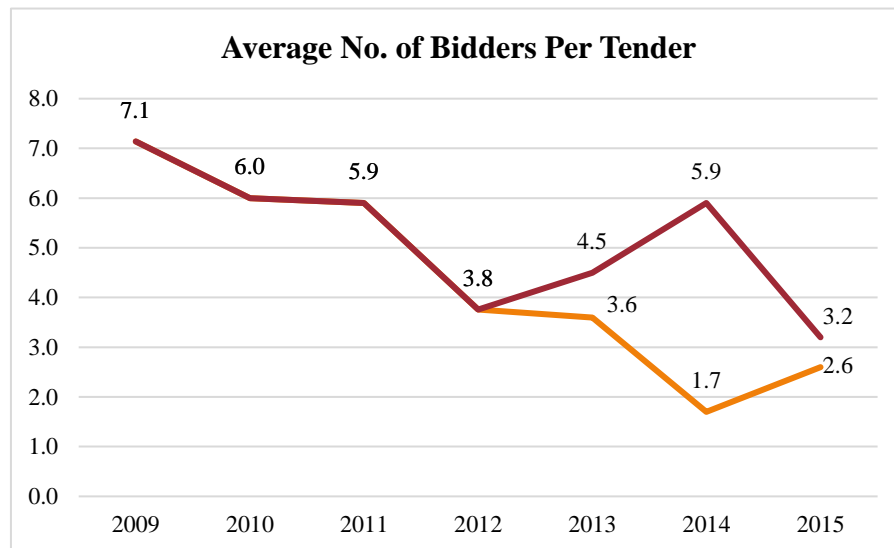


Source: ERA Annual Procurement Report to FPPPA (2012-2015)

In a similar trend to the bid evaluation time, ERA required substantially more time than the business standard to procure construction projects during the years 2012 to 2015 EFYs; while it should have completed the same 180 Days as per its business standard. Likewise, the service project procurements also took extended period than the business standard within the past four years while they should have been delivered within the same amount of time to be taken by the construction projects, i.e., 180 Days. When compared to the records of Alexeeva et al. (2008), ERA's current procurement process corresponds to those African countries having less efficient system.

Furthermore, the annual KPI reports indicates that there are significant number of cancelled bids due to various reasons such as lack of bidder, absence of qualified bidder, exaggerated offer, workload limitation/turnover requirement, scope change, change in procurement plan and others; and significant number of contracts signed using direct means of procurement. All these to some extent reflect inefficiency of the existing procurement practices. This is found to be in line with the findings of Thorpe and McCaffer (1991) where the prevailing macro-company level both on local, national and international context impacted the market conditions where potential contractors decided whether to bid or not anticipating these conditions.

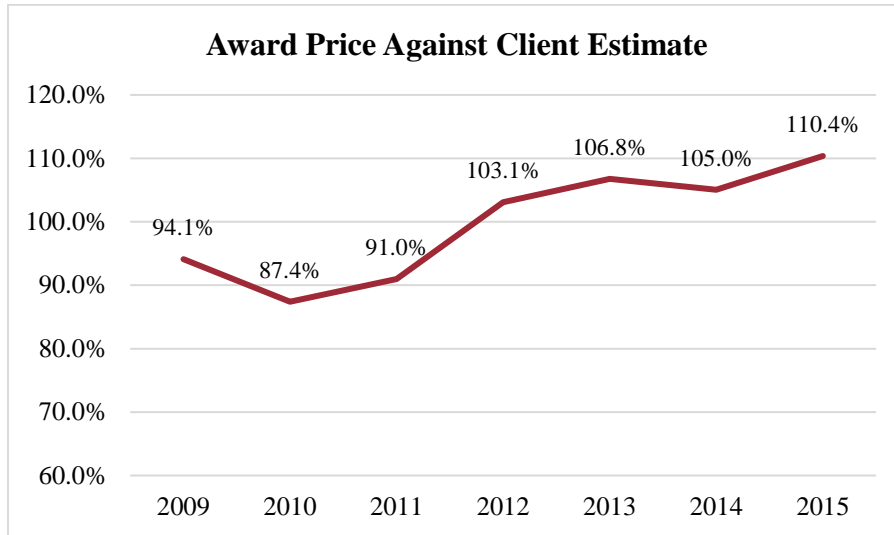
Figure 9: Average No. of Bidders per Tender



Source: ERA Annual Procurement Report to FPPPA (2012-2015)

When it comes to the competitiveness of ERA’s tenders, KPI data of the past seven years has been analysed to review the trend of recent procurement procedures carried out by the office as reported to the FPPPA. In terms of actual number of bidders participating on the tenders floated for civil work projects, the average number of submitted bids has been decreasing over the years from 7.1 to 3.2 as can be shown in the figure shown above. This is particularly true when taking into account the significantly low number of contracts awarded over the past three years. Disregarding the maintenance works tenders, the average number of bidders registered over the past three years is 3.6 (2013), 2.6 (2015) and as low as 1.7 in 2014.

Figure 10: Award Price against Client Estimate



Source: ERA Annual Procurement Report to FPPPA (2012-2015)

The impact of such decrement on the number of bidders per tender is clearly reflected on the total average contract/award price as there is an inverse relation between the availability of projects and competition intensity (number of bidders) (De Neufville et al., 1977). Over these years, the record shows that the award price has been almost consistency increasing since 2011. Particularly over the past four years, the award price has been more than the client's cost estimate. Specifically, the award price was 3.1%, 6.8%, 5.0% and 10.4% higher than the estimate approved/prepared by the estimate these years. The decrement of average number of bidders on the one hand; and the increment of average award price, on the other, shows competitiveness on works tenders was heading relatively limited seeking ERA's attention to address such critical parameter related to VFM; apart the challenges related with pricing & estimating due to the on-going market volatility.

As evidenced on the list of awarded contracts and method of procurements taken from the annual procurement reports, it is understood that the Administration tried to compensate inefficiencies of the tenders, particularly on those project procurements failing to attract the private sector or attain competition, awarding the contracts to SOE Contractors in spite of their performance and workload for managing several projects concurrently.

4.3.3 ERA’s Capacity in Conducting Project Procurement Management

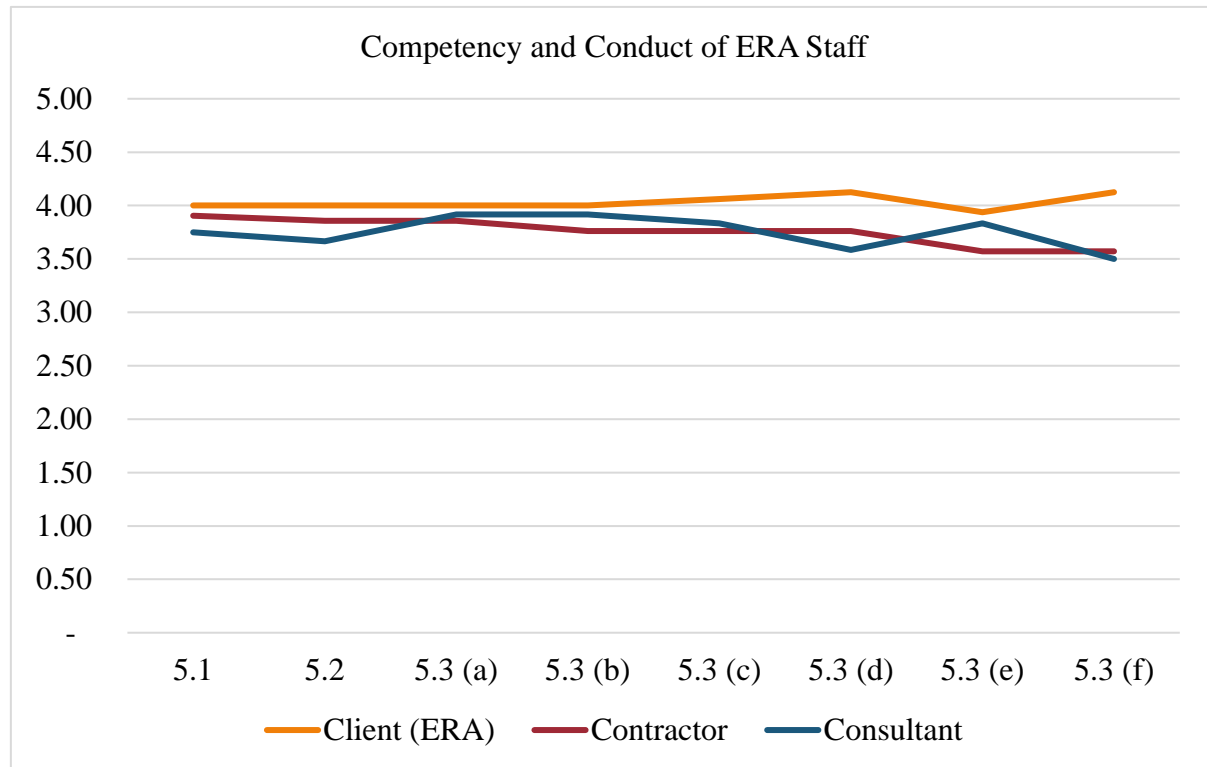
The analysis result of collected primary data collected is shown below:

Table 8: Mean Scores on ERA Capacity in Conducting

N=78 Question	Mean Scores			
	Client (ERA)	Contractor	Consultant	Aggregate Score
5.1	4.00	3.90	3.75	3.88
5.2	4.00	3.86	3.67	3.84
5.3 (a)	4.00	3.86	3.92	3.92
5.3 (b)	4.00	3.76	3.92	3.89
5.3 (c)	4.06	3.76	3.83	3.89
5.3 (d)	4.13	3.76	3.58	3.82
5.3 (e)	3.94	3.57	3.83	3.78
5.3 (f)	4.13	3.57	3.50	3.76
Average Mean	4.03	3.76	3.76	3.85

Source: Own Survey Data, 2023

Figure 11: ERA’s Capacity in Conducting Project Procurement Management



Source: Own Survey Data, 2023

Unlike the previous variables, the analysis shows almost unanimous level of agreement toward the competency of ERA staff as well as their conduct/professionalism when carrying out project procurement activities. As usual, the Client tends to agree more on the sub-factors giving positive support/response towards the existing workforce while the other stakeholders, providing slightly lower scores as shown in the chart drawing using the liker scale; but rather some deviations on few indicators.

The mean scores implies that the current project procurement practices are being carried out by relatively competent professionals despite striking few opinions on the inadequacy of the current staff due to frequency turnover by the management. Moreover, there appears to be positive results, if not unanimous, regarding the capacity of ERA Project Procurement Staff and behaviour while conducting project procurement practices which is the result of continuous capacity building schemes, training and experience (Karttunen, 2018).

The survey results show that ERA staffs are approachable to bring and discuss any project procurement matters to the client staffs. Yet, there is significant number of respondents who chose to remain neutral in regarding the characteristics of the staff. Continuing to such character measures of the client’s staff, all parties also concurred that ERA’s project procurement staffs takes time and effort to understand the customers. Such adoption of ethical behaviour while conducting project procurement activities will support ERA’s effort to attain the basic principles including value for money, economy, efficiency and effectiveness (Wamba-Taguimdje et al., 2020). Finally, despite scoring higher, the level uncertainties, i.e., large number of neutral responses, on some indicators could be an indicator for the presence of reservation from the population.

4.3.4 Legal Framework

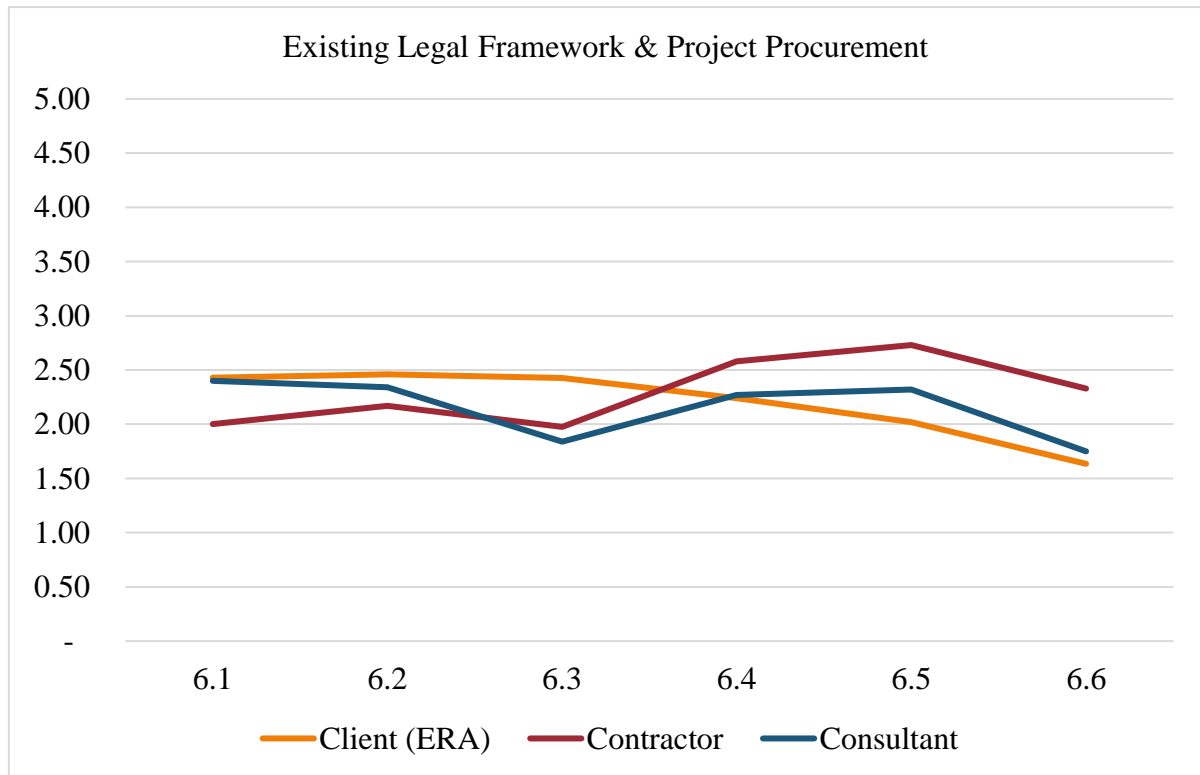
The analysis result of collected primary data collected is shown below:

Table 9: Mean Scores on Existing Legal Framework

N=78	Mean Scores			
Question	Client (ERA)	Contractor	Consultant	Aggregate Score
4.1	6.1	2.43	2.00	2.40

N=78	Mean Scores			
Question	Client (ERA)	Contractor	Consultant	Aggregate Score
4.2	6.2	2.46	2.17	2.34
4.3	6.3	2.43	1.98	1.84
4.4	6.4	2.24	2.58	2.27
4.5	6.5	2.02	2.73	2.32
4.6	6.6	1.64	2.33	1.75
Average Mean	2.20	2.30	2.15	2.22

Figure 12: Existing Legal Framework



Source: Own Survey Data, 2023

Quite to the contrary to that of the previous variable, i.e., competency and conduct of ERA staff, the mean score demonstrates unanimous disagreement towards the appropriateness of the existing law among the stakeholders; although to various degree. Unlike the previous variables, the response from ERA staff for some sub-factors is lower showing some level of support to the existing policies and procedures which is understandable due to its previous involvement in drafting the existing legal documents.

- The general opinion is that the existing legal framework is not comprehensive where it came short in providing the operating procedures on some circumstances such as the procurement of high-complex projects to be delivered via design-build and turnkey methods. (OECD, 2011).
- The result also reflects stakeholders concern on qualification criteria introduced six years ago since when the local construction industry has gone through a radical change associated following continuous devaluation local currency, the COVID pandemic and geopolitics all causing unpredictable inflation and disrupting the previous supply chain. Whereas, the current qualification criteria seem to be outdated to employ competent contractor through competitive bidding process (Lam et al., 2001).
- There is some reservation from the sector if the traditional selection procedure, i.e., lowest evaluated responsive bidder, is appropriate in the current context. The mean score shows strong opinion from respondents that failure to demonstrate the financial offers of lowest evaluated bidders, particularly those offering abnormally low bids, should be a ground for non-responsiveness Mitchell and Agapiou (2003) as contractors tend to offer low to secure the work and then hunt for “extras” to gain competitive advantage and also profitability placing a high value; hence, placing a high value on the lowest evaluated price raises the danger of opportunism and disputes and impedes collaboration (Korczyński, 1996).
- Regarding the legal provisions which allow procuring entities to entertain price adjustment for construction works contracts, the analysis challenges the effective date for the compensation scheme. To this end, it is noted that FPPPA directive, article 16.14.2, which states “the *Public Body shall only allow price adjustments in respect of works contracts after 12 months from the effective date of such contracts*”; while construction project tenders require months prior contract awarding before the application of this extra one-year effective period; whereas, the severe nature of inflation in the current situation is forcing clients, including ERA, and contracting parties, to postpone projects to avoid swimming in never ending financial debacle due to escalations that are now seeming unpredictable (Musarat et al., 2021).

- Finally, the analysis reflects that the existing standard procurement documents and conditions of contract are suitable for the construction industry where the market is mainly accustomed in delivering contracts drafted using other internationally reputed conditions such as the FIDIC. The tender documents shall be suitable and relevant to the complexity of the project about the proposed contract, rules, conditions, etc. supplied to the contractor which will enable him to price the work as accurately as possible, taking into account all the special peculiarities which every building project possesses as suggested by Cook (1991).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This final chapter would summarize the key findings; and later discusses the conclusion drawn from the analysis. Then, it puts forward recommendations based on the key findings which aim to improve project procurement practices of Ethiopian Roads Administration. Finally, reminding the limitation of the research, some suggestions for future study are indicated.

5.1. Summary of Findings

According to the results of this study, the aggregated mean score of the identified project procurement variables is 3.22, which indicates that there is some uncertainty on the practices by the respondents. Based on the results of statistical analysis, this section summarizes the main findings drawn from the study.

Planning and Quality of Procurement Documents

Based on the majority of responses collected from the survey, there is a general consensus that ERA's Project Procurement Practices complies with the law of the country and tries to emulate best practices & improve the existing standards & business processes such as adopting FIDIC conditions of contract; however, there are insufficient planning activities to result effective procurement. Such lack planning activities propagated to on the quality of its procurement documents starting the choice of project delivery methods, risk allocations and also the price adjustment schemes which are found to be challenges on the current practice by the respondents. There are also tendencies to award unusually higher number of contracts to SOE Contractors in spite of their performance and their capacity to manage several on-going projects concurrently.

Process Efficiency and Reputation

The stakeholders are of the opinion that ERA's process is fairly transparent where there is a

relatively higher degree of confidence on the handling of procurement issues and complaints with fairness and transparency which is verifies the existence of conducive environment despite the current project procurement process being unreasonably lengthier which is also supported by the secondary data apart the lack of competitiveness on recent years tenders. Furthermore, the results show insufficiency in making procurement decision on time and financial disbursement challenges impacting the reputation of the client as well as insufficient level of collaboration with its stakeholders to address project procurement issues.

Staff Competency and Conduct

Its major stakeholders, contractors, and consultants, are basically satisfied with overall competency of project procurement staff and shows there is professionalism conduct inciting higher degree of reliability on its current capacity as understood from its aggregate mean score of 3.85.

Legal Framework:

There appears to be a unanimous disagreement among all parties on the sufficiency and appropriateness of existing legal framework including the proclamation and directive issued by the MoF; where the suitability method selection, reliability of formulas associated with qualification criteria, fairness of existing price adjustment provisions, flexibility of standard procurement documents and conditions of contract to suit complex projects, as well as infant deployment are all challenged by the respondents.

5.2. Conclusions

This section discusses the conclusive outcomes of study as discussed hereunder.

ERA has been one of the most reputed institutions in the country when it comes to project procurement and management practices where its senior professionals are usually sought and recruited by international organizations; while other governmental organizations, and also foreign institutions, seeking expertise advise taking into account its reach experience on project procurement, Hence, identifying the underpinning challenges required sufficient background information and internal engagement to identify contemporary issues relevant to the study.

Planning and Quality of Procurement Documents

Despite efforts being made in preparing market assessment and strategy to supplement the annual procurement activities, aggressive and overstretched plans tend to sway ERA, with some level of external influence, to engage in the procurement of projects incompatible with what the market can provide. The existence of piled up pending requests for road infrastructure developments, resulted in an urge to choose immediate, rather than recommended, project delivery methods. The absence of price indices for some of the major construction inputs that are sourced from foreign market had been a challenge to devise proper price adjustment schemes which can compensate contractors over expenditure due to inflation at the same time assuring value for money, resulting in a flawed procedure and application contractual stipulations.

Process Efficiency and Reputation

It is evident that the entire construction sector and our project management field owes the Ethiopian Roads Authority, now Administration, for pushing on the preparation of laws, policies and standards suitable for the industry. Its previous background contributed so much for having an established system for ensuring transparency and fairness on the end-to-end project procurement processes. Still, there are some stubbornness in engaging the stakeholders failing to take advantage of collaborative practices in anticipating and timely identifying problems and improving the quality of procurement.

However, for various reasons of local, national and international, contractors prefer to avoid ERA's tender which is also related to its reputability. Government's significant budget deficit resulted for the Ministry of Finance unable to allocate the required funds to disburse funds on time. Particularly, depletion of foreign currency reserves has become a reality where contractors need to wait years for the payment of contracts delivered in foreign currency portion. On the other hand, instability of the national economy associated with the local currency being weak susceptible to high level of devaluation risk is not welcomed by many as a rewarding to be engage on construction projects which are by nature complex and take longer duration. These coupled with governance issues, political instabilities & security problems; and right-of-way enforcements challenges are additional layers of complications

contractors need to consider prior committing on ERA tenders.

The variables seems to have a knock-on effect as most challenges associated with internal inefficiency are traced back to the initial planning of the project procurement, i.e., incompatibility of demand and supply, which propagated to budget deficit to finance all on-going contracts under implementation as well as new entries after completion of the selection process which is in turn is impacting the reputation of the client resulting in a lack of interest from potential contractors to either participate on its tenders, or offer competitive prices.

Staff Competency and Conduct

Due to the core institutional foundation of the institution, there is still residual capacity in conducting project procurement activities. Nevertheless, it is also found noteworthy that such a reflection to some extent could be relative opinion with other institutions its stakeholders are engaged with; and may not represent the changes over the time.

Legal Framework:

Finally, it is understood that the existing legal framework has been in place for the past fifteen years where since then there had been various developments on the technology and delivery methods of construction projects, change in the market condition due to experience, macro-economic variations influenced by prevailing conditions; however, despite some sub-factors being identified to address contemporary issues, the law provided sufficient ground to operate end-to-end project procurement processes. As a result, there is striking gap on furnishing appropriate standard procurement documents and conditions of contract for complex projects. Evidently, it is found that price adjustment provisions as well as qualification criteria are not appropriate to instil competitive tendering market. Despite challenging many countries and organizations, including the developed nations, there are challenges in mitigating abnormally low offers as the existing method of selection does not encourage procuring entities to further enquire clarification & substantiation and accordingly take appropriate decisions. Also, for lacking to support the entire end-to-end project procurement process, immediate enforcement of electronic government is impacting the efficiency those procurements carried out using the support of the system portal.

5.3. Recommendations

In view of the foregoing, the author suggested the following:

Planning and Quality of Procurement Documents

There must be well-prepared long-term master plan from which the annual project procurement plans are to be deduced based on their importance/priority. Whereas, specific project procurement activities need to be tied with detailed market assessment studies and proper planning. Whenever there is a gap in the demand-supply analysis, ERA needs to consider postponing the implementation of its projects until the market can provide suitable contractor for the construction of the road infrastructure. Alternatively, devise justifiable means hiring capable contractor that assures value for money.

When it comes to scope definition, ERA and its design consultants should improve the design and documentation capabilities to establish the scope of projects adequately and accurately. Drawings, specifications, quantities, to the extent possible, must define the project without the need for frequently changes, i.e., changes of project scopes should be exception rather than the norms. Similarly, design consultants shall determine optimal duration of projects tying cost estimating and schedule development. Rather than responding to individual design defects, attention shall be drawn towards constantly reviewing whether existing policy delivers appropriate design practices and identifying situations compromising the required practices.

Process Efficiency and Reputation

Creating a partnership relationship with its stakeholders and engaging them to be closely involved would help them to understand more about the existing practice/ process, identify current and future problems, and devise collaborative means to address the challenges. It also helps ERA to understand the perception towards the client and design an approach to maximize market interest and participation. Utilizing a collaborative approach helps to share financial and human resources as well as managerial and technical skills that are critical for achieving successful project procurement practice which otherwise could not afford to put in place by its own.

ERA's management shall retract from the distractions of having engaged in other high-profile projects related to eco-tourism; rather give priority to the administration of its internal affairs making proper and timely decision on projects under implementation and address the valid outcries from various stakeholders, particularly the contracting parties for issues related to governance issues, security problems; and right-of-way enforcements challenges.

ERA shall develop critical criteria for selecting procurement path, including project delivery method based on the type of project, its amenability for standardization, availability of competitive market, preference of time expediency, desire to control over quality & design, and other parameters.

Staff Competency and Conduct

Above all, ERA should lead the industry in creating capable project management works force building the capacity of contractors and consultants operating in the sector. Similarly, it should do more in retaining its most qualified staff, devising a knowledge transfer mechanism to the others, and also recruiting professionals on areas/ departments which requires skilled manpower such as the design directorate. This is will be the foundations to address the challenges of the existing practices; and at the same time maintain/improve the best/better practices. There is a need for a system of equipping the professionals with new skills and knowledge through training and capacity building which should take into account various procurement skills including strategic analytical, tactical – technical, management, and operational skills.

Legal Framework

ERA shall closely work with all relevant bodies associated with procurement law and supply chain of the sector such as the Ministry of Finance, Ministry of Urban and Infrastructure, Ministry of Transport & Logistics, Construction Authority, above all FPPPA and Ethiopian Statistics Service. The price adjustment provision of the directive which prohibits fair adjustments for price escalation, particularly in the first year of the contract in a state where the world is exhibiting volatile market inflation, needs to be revised. As the volatility of the market in recent years seriously impacted the qualification criteria set by FPPPA where by

now the relevant factors seem to be obsolete requiring immediate revision. Similarly, the Ethiopian Statistics Service, possibly in collaboration with educational institutions, shall also prepare base indices for price adjustment inputs having no local producers.

Having an experience on the implementation of complex projects, and also challenges faced during evaluation of works and consultancy projects, ERA take the initiation for the introduction of standard procurement documents and conditions of contracts for such projects and also stipulations to mitigate abnormally low tenders.

5.4. Recommendation for Future Research

The goal of the study is to look into the project procurement practices and challenges at ERA. In this sense, the study furnished important findings, but due to scarcity of resources, there are some potential limitations which need to be addressed for detail undertakings and future researches. Only four procurement management variables were examined in this study with limited number of sub-factors applying quantitative research methods.

Future study considering ERA might, for example, build on the technique contributions by looking for different metrics, a mixed research strategy, with large samples, and determining other variables in procurement management practices and challenges. It is also recommended to pursue further studies addressing individual challenges identified in this study, particularly initial activities related to project procurement starting from initiation till the end of selection process as they would have major impact at the back-end of the project management.

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Appendix A

QUESTIONNAIRES

Dear Respondent,

As part of my M.A. study in Master of Project Management at Addis Ababa University, College of Business and Economics School of Commerce, I am undertaking a study on the title “ASSESSMENT OF PROJECT PROCUREMENT PRACTICES AND CHALLENGES AT ETHIOPIAN ROADS ADMINISTRATION”.

The main objective of this study is to study the existing procurement practices of the Ethiopian Roads Administration against the theoretical knowledge, legal framework of the country, internationally accepted and best practices of project procurement.

I have developed this questionnaire to collect views of professionals working for employer, contractors and consultants for completeness of my study to be conducted in partial fulfillment of the requirement form master’s degree in project management from Addis Ababa University. I am kindly requesting you to fill the attached questionnaire to your best knowledge. All information will be confidential and will be used for academic research only; your contribution in filling this questionnaire will help to identify Ethiopian Roads Administration’s project procurement practices, gaps, challenges and propose areas of improvements.

Your response, in this regard, is highly valuable and contributory to the outcome of the study. All feedback will be kept strictly confidential and utilized for this academic research only.

Thank you in advance for your kind cooperation, willingness to participate in this study, and your time to fill out this questionnaire. Please note that your opinion matters.

Best Regards,

Dawit Jihad

E-mail: dawitjihad@gmail.com

Tel: 0911813688

Addis Ababa, Ethiopia

Part I

1. General Background Information

The questions below are related to your organisation and yourself. Please indicate your response by ticking (X or √) the appropriate box (es) or by filling the blank spaces provided, as appropriate.

1.1 Name of organization (Optional): _____

1.2 To which one of the parties is your organization categorized:

Employer Main Contractor Consultant Subcontractor

1.3 Educational Background

First Degree Second Degree Above Second Degree

1.4 Years experience in the organization:

More than 10 years 5-10 years Less than 5 years

1.5 Your years of related experience:

More than 10 years 5-10 years Less than 5 years

1.6 Your Name, Title and Contact address:

☞ Name (optional): _____

☞ Job Title: _____

☞ Tel (optional): _____

☞ E-mail address: _____

2. Awareness of Existing Procurement Procedure:

2.1. Are you familiar with the federal public procurement procedure?

Yes No

2.2. Are you familiar with the Standard Procurement Document (Bidding and RFP Document) of the Federal Public Procurement & Property Authority (FPPPA)?

Yes No

2.3. Are you familiar with ERA's Standard Procurement Documents and Procedures?

Yes No

Part II

3. Planning and Quality of Its Preparation/Procurement Documents

The following questions related with ERA's Planning Procedures Including its Preparation of Procurement Documents are found to be relevant as identified from review of literature and personal experience in the process of project procurement in construction projects.

Please consider in terms of your organization's experience and/or your knowledge the degree of your agreement on the following and respond by ticking in (X or √) the appropriate box.

Description		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3.1.	ERA's Tendering Procedures are in accordance with the country's procurement defined in the relevant proclamation, directive & manual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.	Pre-construction activities, including initiation, feasibility, design as well as procurement are properly planned by ERA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3.	ERA's annual procurements take into consideration of the market condition to make bids more competitive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.	The tender float period provided for bidders' preparation of bids/proposals are acceptable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.5.	The contract periods provided by ERA for the delivery of projects are sufficient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.6.	There are consultations made by with its stakeholders (Contractors & Consultants) to address project procurement issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.7.	ERA's Standard Procurement Documents are drafted in line with FPPPA's Standard Documents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.8.	ERA's Standard Bidding and RFP Documents are complete and clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.9.	Specification/Employer's Requirement and Terms of Reference provided by ERA are clear and unambiguous.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.10.	The documentation requirements for bid submission in ERA Standard Procurement Documents are reasonable/ acceptable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.11.	The qualification criteria set in ERA Standard Procurement Documents are fair/ reasonable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.12.	There is fair allocation of risks in the ERA's Current Standard Bidding Documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3.13.	ERA's Bidding Document provides fair price adjustment provisions for compensation due to inflation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.14.	ERA's choice of project delivery methods in its projects (DBB and DB) is appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have any remark regarding ERA's Planning Procedures and Quality of its Procurement Documents?

4. **Process Efficiency and ERA's Reputation** in Project Procurement Process

The following areas are aspects related to process efficiency and client reputation are found to be relevant as identified from review of literature in the process of project procurement in construction projects.

Please consider in terms of your organization's experience and/or your knowledge the degree of your agreement on the following and respond by ticking in (X or √) the appropriate box.

	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4.1	The overall procurement process time taken by ERA Project Procurement is efficient and reasonable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2	ERA's bidding process is transparent to the bidders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3	ERA's complaint handling procedure is fair and transparent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4	Information dissemination, such as Invitations, Clarification & Addendum, Notification of Results, are fair, consistent, and transparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.5	ERA's Contractor's and Consultant's performance evaluation are transparent and fair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6	There is timely disbursement of payments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.7	There is fair and timely determination to Claims	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8	There is timely response to technical requests such as design approvals/changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.9	There is collaborative relation and no communication gap among the relevant stakeholders, i.e., Contractor, Consultant, ERA, and others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.10	ERA's Project Procurement system is reliable for bidding firms to consider it as a partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.11	There is little political interference in ERA's procurement process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.12	The current electronic government procurement enhanced the efficiency of project procurement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have any remark regarding ERA's Tendering Procedure?

5. Competency and Conduct of ERA Staff in Conducting Project Procurement Process

The following areas are aspects related to internal capacity/competency and conduct are found to be relevant as identified from review of literature and personal experience in the process of project procurement in construction projects.

Please consider in terms of your organization's experience and/or your knowledge the degree of your agreement on the following and respond by ticking in (X or √) the appropriate box.

Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5.1. ERA has the required/experienced professional to manage the pre-construction process, i.e., planning and procurement process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2. ERA has the required/experienced professional to manage the construction management/contract administration process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3. Conduct of ERA's procurement staff/team with respect to the following are satisfactory:					
(a) Professional/Ethical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Friendly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Approachable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) Understanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Responsive in giving the required information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Legal Framework and Project Procurement Process

The following questions are related to the existing legal framework identified as relevant from review of literature in the process of project procurement in construction projects.

From your organizations experience and/or your knowledge; Please indicate the extent of your agreement or disagreement by putting (x or √) mark in the appropriate box.

	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7.1.	The qualification criteria for construction projects of the existing legal framework/procurement directive are appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2.	The lowest evaluated bidder selection criteria being exercised based on the existing procurement directive is appropriate and assures value for money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3.	The existing price adjustment provisions of the procurement directive is appropriate in compensating the contractor/consultant for market inflation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.4.	FPPPA's existing standard bidding documents for project works are appropriate for the construction industry rather than the FIDIC Conditions of Contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.5.	The existing standard documents is flexible/adaptable for complex construction works such as turnkey design & build projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.6.	The existing electronic government procurement (e-GP) is adequate to be adopted for construction project procurement activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part III

7. Improvement Areas on the Existing Project Procurement Practice

8.1. Do you have any issues to mention regarding challenges on the existing project procurement process?

a. Related to the existing procurement law.

b. Employer's/ERA related.

c. Contractor's/Sub-Contractor's related

d. Consultant's related

8.2. What do you suggest as measure to improve the existing project procurement practices?

a. Related to the existing procurement law.

b. Employer's/ERA related.

c. Contractor's/Sub-Contractor's related

d. Consultant's related

8.3. Other comments you may forward regarding the subject matter.

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

Thank You!