STUDY ON IMPACTS OF LEAST BIDDER AWARDING PRACTICE ON PUBLIC BUILDING PROJECTS: THE CASE OF ADDIS ABABA CITY CONSTRUCTION BUREAU

By

EZRA ERKYIHUN TESFAYE

A THESIS SUBMITTED AS A PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF SCIENCE IN CONSTRUCTION TECHNOLOGY AND MANAGEMENT

To

DEPARTMENT OF CONSTRUCTION TECHNOLOGY AND MANAGEMENT

Advisor: - Denamo Addisie (PhD)

ADDIS ABABA

ADDIS COLLEGE

OCTOBER 2021

አዲስ ኮሌጅ

ADDIS COLLEGE

School of Graduate Studies

DECLARATION

I hereby declare that this thesis entitled" **Impacts of Least Bidder Awarding Practice on Public Building Projects: The Case of Addis Ababa City Construction Bureau**'' was prepared by me, with the guidance of my advisor. The work contained here is my own except where explicitly stated otherwise in the text, and that this work has not been submitted, in whole or in part, for any other degree or professional qualification.

Author	Signature,	Date
_____	_____	_____

Witnessed by:

Name of student Advisor	Signature,	Date
_____	_____	_____
Name of student co-advisor	Signature,	Date
_____	_____	_____

ADDIS COLLEGE

SCHOOL OF GRADUATE STUDIES

THESIS PROPOSAL APPROVAL FORM

This is to certify that the thesis proposal entitled 'STUDY ON IMPACTS OF LEAST BIDDER AWARDING PRACTICE ON PUBLIC BUILDING PROJECTS: THE CASE OF ADDIS ABABA CITY CONSTRUCTION BUREAU', has been carried out by _____ ID NO. _____.

Signed by Examining Board:

_____	_____	_____
Advisor Name	Signature	Date
_____	_____	_____
Internal Examiner	Signature	Date
_____	_____	_____
External Examiner	Signature	Date
_____	_____	_____
Chairman	Signature	Date
_____	_____	_____
School Dean	Signature	Date

ACKNOWLEDGEMENTS

First of all, I would like to thanks my Almighty God who gave me enriched life and the opportunity to pursue my graduate study.

My heartfelt thanks also goes to my advisor Dr. Denamo Addissie (Asst. professor) for his intellectual guidance, insightful comments, supportive patience, and consistent encouragement throughout the process of the study.

My sincere acknowledgement also goes to the management and employees of Addis Ababa City Construction bureau and contractor and consultant professionals. I would like to thank all for their co-operation in providing access to information and benevolence help.

I would also like to thanks and give appreciation for those researchers of whom my study refers their paper as a source.

The last but not the least acknowledgement goes to all my family for their assistance in my academic endeavor, support and encouragement.

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

ACRONYMS

AA	Addis Ababa
ECSA	Ethiopian Central Statistics Agency
EU	European Union
FDRE	Federal Democratic Republic of Ethiopia
GDP	Gross Domestic Product
LE	Egyptian Pound
MEAT	Most Economical Advantageous Tender
MoF	Ministry of Finance
MOWUD	Ministry of Works and Urban Development
MSCE	Micro and small construction Enterprises
MSCE 1	Micro and small consulting Enterprises Grade 1
MSCE 2	Micro and small consulting Enterprises Grade 2
PPPA	Public Procurement and Property Administration
Pr	Project
SPSS	Statistical package for social science

ABSTRACT

The current construction feature indicates that it becomes familiar to see abnormally low bidder awarded a contract just because they offer the lowest price among the competitors. On the contrary, it becomes common to see projects awarded on least price bid evaluation method with poor quality, contract period overrun, termination, and inappropriate expenditure of public budget. This research aims to investigate impacts of least bid award system on performance of public building construction projects in Addis Ababa. The study was also undertaken to survey professionals attitude on the current bid evaluation system and to forward the opinion they have on other alternative bid evaluation and contract award systems. Literature review was carried out to assess what the practice of construction procurement looks like in different countries across the world and` primary data were collected to assess construction procurement practice in Addis Ababa city construction bureau in particular. A questionnaire was prepared to collect professionals attitude that are directly exposed to the topic, and project information's were gathered through document review. The projects investigated were those projects constructed by Addis Ababa city construction bureau as a client and were awarded only on the least bid evaluation and contract award procedures. The research pointed out and analyzed different types of bid evaluation and contract award methods which are exercised in different countries and construction industries. The research found out that the least price bid evaluation is the main bid evaluation procedure performed by Addis Ababa city construction bureau to award public building construction projects. The research also found out that, fixed price and restricted bid evaluation and contract award methods are rarely adopted by the firm. The traditional least bid evaluation method is highly criticized for its negative impact on quality, schedule, and dispute/claim during implementation phase. In addition, many projects awarded for abnormally low bidders in least bid evaluation method got a problem of finance, material shortage and exaggerated delay referring the document review performed on the projects. On the other hand, there are bidding procedures widely accepted by professional respondents proposed on the study for their constructive approach for the attributes included on the research. Finally, the researcher recommends Addis Ababa City Construction Bureau to adopt either the engineer's estimate or the average bid evaluation methods which were also reinforced by participants of the study.

Key words: - construction procurement, competitive least bid, Addis Ababa city construction bureau.

CHAPTER ONE

1 INTRODUCTION

1.1. BACKGROUND

The construction sector is an industry considered as a stimulant for economic growth of a country because it has a strong correlation to other sectors in the economy. The construction industry plays an important role in the economy, and the activities of the industry are also vital to the achievement of national socio-economic development goals of providing shelter, infrastructure and employment.

The construction industry contributes significantly to many countries GDP. Global expenditure on construction activities was about $4trillion in 2012. Today, expenditure on the construction industry exceeds $11 trillion a year, equivalent to about 13% of global GDP. This spending was forecast to rise to around $14.8 trillion in 2030 (wikipedia, 2021). Construction activities affect nearly every aspect of the economy and that the industry is vital to the economic growth of the economy (IO AJE, 2012). Therefore, it can be assumed that the industry serves as a bridge to create linkages between other economic sectors. Construction industry in Ethiopia is also one of the major sectors which involves substantial amount of finance and human resources.

According to Ethiopian central statistical agency report, the construction industry is expected to register a 36.4% annual growth and contribute 5.2% to the country's GDP (ECSA, 2007). The sector is the highest recipient of government budget in terms of government development program. Consequently, public construction projects consume an average annual rate of nearly 60%, according to (MOWUD, 2006) of the government's capital budget.

In order to achieve sustainable economic growth and effectively use the allocated budget properly, it is necessary to perform the pre, construction and post construction activities in appropriate manner. The construction of public projects especially in economically poor countries must be completed based on the schedule, cost and quality so that the limited finance is exploited properly for the intended purpose.

Bid and Procurement is a substantial and integral element of Construction project management. The procurement process in public construction projects is the major process to be done properly so as to use the Government budget properly. On the contrary, Bid evaluation and contract award procedures necessarily need to be well designed. Thus, efficiency in procurement procedures has become one of the crucial factors for determining organization efficiency; as a result tender plays the key role for organizations success achievement (Paulraj, 2006).

Currently, Ethiopian public sector procurement is majorly practiced using the traditional competitive method because PPA proclamation number 649/2009 article43 (8a) (PPA, 2009) states the successful bid shall be the bid found to be responsive to the technical requirements and with the lowest evaluated price. The Legal but the customary practice of awarding contracts to a lowest bidder was established to ensure the lowest cost for completing a project. In public construction works, this practice is almost universally accepted since it not only ensures a low price but also provides a way to avoid fraud and corruption (Iritshad, 1993).

1.2. PROBLEM STATEMENT

Selection of the most appropriate bidder for a project is a crucial challenge faced by the construction industry (Alexanderson & Hulten, 2006). It is more important to identify and use a suitable bid evaluation method that considers contractors performance to ensure successful completion of projects, will have the best performance during and after construction. Moreover, the traditional low-bid approach tends to promote more adversarial relationships rather than cooperation or coordination among the contractor, the designer and the owner generally faces increased exposure to contractor claims over design and constructability issues (Khan & Khan, 2015).

On a journal article performed in Addis Ababa City Administration on 2019 , it is concluded that the major delay and termination cause for public building construction project is contractor related difficulty in project financing (poor financial capability) because contract is awarded solely for the least bidder from those responsive bidders (Abdurezak & Neway, 2019).

Nonetheless, evident researches have been conducted regarding systems and practices of bid evaluation and contract delivery. (Gebru, 2018), evaluates bid evaluation process on non-residential public building projects and identify the influential problems that the construction industry facing in respect to bid evaluation process. (Mosisa, 2006), in a survey conducted in oromia regional state, realized that non – existence of real competition during contractor selection were the major problem observed with the existing approach of delivering projects. (Belachew, 2018), investigates procurement practices and challenges in Ethiopia taking the practice of Ethiopian Agricultural Transformation Agency as a case study. (Mechegiaw, 2012), highlights the challenges and opportunities associated with the bid procurement trends in construction industry of Ethiopia, especially in Federal Government owned projects and to analyze their impact over the life cycle of construction projects.

To this effect, this study mainly focus in investigating the impact of the current least bid evaluation on performance of public building projects in Addis Ababa city construction bureau and to propose improvements in the existing practices and to suggest better and more useful techniques of bid evaluation to improve the project performance.

1.3. RESEARCH QUESTIONS

The study attempted to answer the following research questions:

1. What is the method of construction works procurement and bid evaluations practices in Addis Ababa city construction bureau for public building projects?
2. Does the bid evaluation system have an impact on project performance in terms of cost, time and quality?
3. What is the suitable bid evaluation system suggested to the public body enhancing performance of public building construction projects?

1.4. GENERAL OBJECTIVES

The General objective of this study is investigating the impact of least bid awarding on the performance of building construction projects.

1.5. SPECIFIC OBJECTIVES

The specific objectives of this thesis are:-

1. To explore the method of works bid evaluation adopted by public bodies in general and by Addis Ababa city construction bureau in particular.
2. To investigate the impact of the explored bid evaluation system on project performance in terms of cost, time and quality.
3. To propose a suitable bid evaluation system in order to contribute to enhancement of performance of public construction projects.

1.6 SIGNIFICANCE OF THE STUDY

The research is done in a direct use of current construction project data in Addis Ababa construction bureau. Thus, research output might help to observe major problems as well as propose solutions for constraints that are affecting the procurement on public construction projects in view of transparency, efficiency, fairness and impartiality in selection of appropriate contractor. Adopting the appropriate procurement and bid evaluation process helps to select the right contractor as well as enables public body to achieve its objectives. It also helps to enable the utilization of the large sum of public money spent on procurement in a manner that ensures greater economy and efficiency in public projects; these will benefits the general public.

1.7 SCOPE AND LIMITATIONS

1.7.1 Scope of the study

The scope of the research is limited only to public building construction projects constructed by Addis Ababa City Construction Bureau. Projects by non-governmental organizations and other owners are not included. This is mainly because of the limited time and budget available to conduct the research. The core point of the study is exploring the impact of least bid awarding on project performance of Addis Ababa city public Building construction projects.

1.7.2 Limitations of the study

The research process faced major challenge in getting access to well organize document during document review part of the study. This was because the engineering procurement team were newly organized after 2011E.C.In addition, distributing and collecting questionnaires to professional respondents was a challenge due to pandemic Covid 19 protocol. The last but not the least limitation was financial weakness of the researcher and time shortage.

1.8 ORGANIZATION OF THE STUDY

This research work is organized in five chapters. The content of each is elaborated below:

- → **Chapter 1: Introduction** – presents statement of problem, research questions, objectives, scope and limitations and finally significance of the study.
- → **Chapter 2: Literature Review**- reviews literature related with the topic of the research and attempts to present a theoretical background and framework for the research.
- → **Chapter 3: Methodology**- explains the approaches, study design and methods to achieve objectives.
- → **Chapter 4: Result and Discussion**-presents the results and findings of the research and discusses them in detail.
- → **Chapter 5: Conclusions and Recommendations**-summarizes and presents conclusions and recommendations drawn based on the research findings. Finally, bibliography and appendices have been presented.

CHAPTER TWO

LITERATURE REVIEW

2.1 General

Some procurement definitions were selected for this specific study and stated as follows:

The first public body who is accountable for Ministry of Finance and responsible to monitor public procurement practices (The Ethiopian Public Procurement and Property administration) defines procurement as, the purchasing, hiring or obtaining by any other contractual means of goods, works and services. PPA (Proc. No. 430/2005) (PPA, 2009).

Chekol (2014), in his journal article entitled as ‘’Public Procurement Reform In Ethiopia’’, defines procurement as, the basic goal of public procurement is to obtain goods, works, consultancy services and other services at the right quality, in the right quantity, from the right sources, at the right time, place and price to achieve an overall organizational objective (Chekol, 2014).

The other author who defines procurement is Masterman (2002), he said procurement system as, an organizational structure adopted by the client for the implementation and at times eventual operation of a project (Masteman, 2002).

Rameezdeen and Ratnasabapathy (2006), on their journal article entitled ‘’A multiple decisive factor model for procurement of construction services ‘’defines procurement as, it is a key means through which the clients create the pre-conditions for the successful achievement of project-specific objectives (Rameezdeen R & Ratnasabapathy S, 2006) Definition by Walker also states, procurement is the acquisition of project resources for the realization of a constructed facility (Walker D.H.T, 2008)

Skitmore, in his journal article entitled as ‘’selecting an appropriate procurement method for the Construction process’’ states that, procurement is an organizational system that assigns specific responsibilities and authorities to people and organizations, and defines the relationship of the various elements in the construction industry (M.Skitmore, 1998).

The definitions listed above properly describe procurement, but from the researcher point of view definition by (Chekol, 2014) best defines considering this paperwork. Because the paper aims to investigate success of a procurement process in terms of cost, time and quality.

2.1.1 Introduction to current construction industry functioning systems

A construction project is a unique individual arrangement of processes that involves various participants with different tasks who are constrained by various factors, hazards and related risks. With that in mind, the right delivery method (form of construction project management and organization) should be selected with the employer taking the lead role in this decision (Lukas, 2015).

In general, three basic delivery methods are most frequently encountered. Their names may differ, depending on a particular author and country of use. They are most frequently called:
General Contracting or Design-Bid-Build (often abbreviated as DBB) (Lukas, 2015). General Contracting is a traditional form of project delivery where the employer is responsible for the design that includes drawings, specifications and bill of quantities with rates and prices quoted in the contractor's bid at their risk. It is a re-measured contract with the works measured on actual need and paid on the basis of monthly instalments for works done. Contract administration is done by the engineer (Lukas, 2015).

Design-Build (often abbreviated as DB), including Engineer-Procure-Construct (EPC). The Design-Build delivery method is typical of contractor design responsibility with the employer's requirements specifying only the purpose, standards, and scope and performance criteria for the works. It is a lump sum price contract without a bill of quantities. Payments are made in accordance with a payments schedule. With the Design-Build delivery method, the employer gains higher predictability of price and time for completion. The contractor assumes higher risk, so their bid price usually contains a risk surcharge (Lukas, 2015).

Construction Management (often abbreviated as CM), including CM At-Risk and Engineer-Procure-Construction Management (EPCM). The Construction Management delivery method assumes that the employer concludes direct contracts with particular contractors on a lump sum basis. For the sake of their coordination, a construction manager is hired by the employer on a professional service agreement basis. The construction manager is paid on a cost plus basis, so the general contractor's surcharges are restricted. The construction manager is liable for bad management, planning and coordination but not for bad performance by particular contractors.

'Multiple-Prime Contracts', Partnering and Alliancing as separate delivery methods are sometimes found as well (Lukas, 2015).

It is impossible to define the best method and, as a result, hybrid arrangements often tend to appear. Obviously, the most suitable delivery method has to be formulated for every particular project. Financing conditions, employer priorities, project difficulty, the socio-political situation and many other factors are relevant variables which need to be considered. Particular delivery methods differ mainly in respect of design responsibility, contract price determination, contract administration approach; and risk allocation and admission of claims (Lukas, 2015).

The Performance Information Procurement System (PIPS) is the latest among construction procurement systems. It was developed essentially to address the problem of non-performance in the construction industry. As the name indicates, PIPS uses performance information to evaluate the participating contractors. Rather than procuring construction subjectively or based solely on price, PIPS lends objectivity by adopting a risk minimization approach using past performance information along with price for selecting contractors (Dean & Jacob, 2011). Performance based contracting have not yet been used in Ethiopia even though it is allowed by the law. This is due to lack of clarity in the procurement laws and lack of capacity to use PIPS (Jan & Baynesagn, 2017).

The literature above shortly discuss about major practices performed under construction industry. The way and principles of construction project delivery systems were also discussed in addition to current technological advancement in functioning system of construction project procurement. Finally the researcher critically analyze the literature and strongly agree with the adoption of PIPS system (Dean & Jacob, 2011) rather than evaluating a bid solely on price.

2.2 Procurement methods

The Ethiopian federal government procurement and property administration proclamation No.649/2009 article 33 states the following procurement methods (PPA, 2009).

2.2.1 Open bidding: -is shorthand for competitive bidding**.** Allows companies to bid on goods in an open competition or open solicitation manner. The procuring method is almost adopted on all government tenders.

The procurement method is advantageous as it lead an employer getting value for money, advertised on widely circulated media and its wide access to any qualified supplier to bid. On the other hand, being time taking than the other method, sometimes ending up with less performing provider, Needing technical/supervisory resource and skill of the client in preparing the bid document is the major limitations of the method.

2.2.2 Restricted bidding:-unlike open tendering, the method invites a limited number of qualified candidates, sufficient to ensure effective competition. There is a threshold as per PPA/AA in terms of number of qualifiers and total contract amount limit. The method may bring qualified supplier than open tendering; again, May scale-up quality of works and is better option to find out most qualified and proper agencies to procure goods and services from. However, the bidding method may not be transparent and May brought collusion among bidders.

2.2.3 Single source/direct procurement:-Involves inviting a single bidder to submit its offer. The procurement method may bring qualified supplier than open tendering and May scale-up quality of works. There is prerequisite as per PPA/AA directive for adopting this procurement method. The method is applied only when there is one single qualified supplier to fulfill the requirements; the nature of work is continual that the already contracting supplier cannot be reproduced by another supplier and when Emergency situations happen.

The main drawback of the selection process is there may not be transparent and open negotiation among the supplier and the Employer.

2.2.4 Two stage bidding: the procurement method is applied when the employer is not clear on the detail of its requirement. Example can be an investor want to open a factory but no further information about what should be done. Again, applied to draw up detailed schedule of requirements based on proposals from candidates (very similar to request for proposal).through the procuring process the Public Body may also hold discussion with all,

some or one of the candidates as necessary. Then, Invitation shall be sent to the candidates whose proposals have been accepted in the first stage. After the first stage is completed, the second stage bidding shall as far as possible comply with the procedure of competitive bidding.

The advantages of the procuring method includes clients are not worried about even idea initiation and they can invest on multiple sectors. The major drawback of two stage bidding method is being time taking and skilled personnel requirement throughout the procuring process.

2.2.5 Request for proposal:-the procuring method involves inviting a minimum of three candidates to submit proposal based on the expression of interest. The bidding document shall be prepared in conformity with the standard bidding document. Candidates submit technical and financial proposals into two separate envelopes. Finally, the sum of the combined weighted score of technical and financial proposal determines the winning firm with which the contract is negotiated.

2.2.6 Request for quotations:-is applied usually when small valued goods or services are to be procured. To procure goods, works or services the need of which cannot be foreseen, or which cannot be included in the Public Body's bulk purchase of needed items, or Which are needed for immediate use and the estimated value of which is within the threshold. The number of candidates selected shall not be less than three and no negotiation shall be allowed. In request for quotations it is not necessary for the public body and the supplier to sign a contract.

The merits of applying request for quotation procurement method include fast procurement process, not a lot of paper work and least complex procurement process available. However, being vulnerable for fraudulent and collusion is the main drawback of the system.

2.3 Works procurement

2.3.1 Types of works contract

The basic types of works contract includes lump sum (all-inclusive price), Unit Rate (paid against measured work) and Cost plus (paid against constituent inputs).the cost plus works

contract may be applied in form of Fixed fee, Percentage fee or Variable (incentive) fee methods (PPA, 2009).

2.3.1.1 Lump Sum:-uses for small and well defined / building of short duration works. In addition it is preferable for huge manufacturing plants (turnkey).

The type of works contract is advantageous in terms of easy to administration, little/no measurement, less documentation and fixed sum for budgeting. On the other hand, the main drawback of the system is being inflexible to changes and high risk occurring probability (PPA, 2009).

2.3.1.2 Unit Rate (Ad/Re-Measurement):-this is the second basic type of works contract which is mostly used for short or long duration infrastructure construction projects. Its advantages includes equitable basis for bidding, facilitates bid comparison and evaluation, adaptable to changes, periodic payments follow contractor's cash flow and normally little difference between estimates, bids and final cost. Disadvantages includes problems with unbalanced bids/unit rates and needs serious preparation and monitoring of bill of quantities (PPA, 2009).

2.3.1.3 Cost Reimbursable plus fee (Cost Plus):-suitable to implement in urgent and emergency conditions like when catastrophic incidents occur. Cost plus works contract type is also suitable to adopt in Hazard and unpredicted probability (war, tunnelling).in addition, the contract type is convenient to high profit private sector projects (PPA, 2009).

Advantageous in establishing fast and efficient material deliverance and quick work commencement. It is also advantageous for contractors because their absorption of risk is negligible. However, its behaviour of inappropriateness (in basic form) for competitive bidding (see target cost), acquiring Extra professional personnel to control costs by owner and no encouragement for quality control or schedule in lump sum cases are its major demerits (PPA, 2009).

2.4 Contract Award Procedure

The basic financial bidding procedures are competitive and negotiated bid evaluation techniques. To reduce the limitations of the two systems, modifications have been

formulated and practiced in the construction industry. For the purpose of this research, the following contract award procedures are selected: source (Khan & Khan, 2015).

2.4.1 Competitive low-bidding (price based)

According to this method, the contractor offering the least price during bid evaluation signs the contract agreement. Currently, public bodies in Ethiopia primarily adopt this procedure to evaluate construction procurements.

2.4.2 Competitive Average Bidding

In this particular method, the awarded bidder is the one who offers financial amount close to average of all responsive bidders. In general, the winner based on the average bid method is the contractor whose bid satisfies a certain relationship with the average of all bid prices. There exists a different parameter or procedures to select the winner, including:-

1. Some simply use an arithmetic average or a weighted average,

2. Others may use the average of the remaining bids after all bids that differ more than a certain percentage of the average of all other bids are eliminated, or

3. The winner might be the contractor whose price is closest to the average, or the contractor whose bid is closest to, but less than the average.

The basic principle is that awarding a project to contractor applying this scenario avoids adversarial relationship between contractor and stake holders especially consultants, strengthen partnership relationships, the fair price allows the winner to complete his duty as per the schedule, right quality and cost, also assumes contractor get reasonable and realistic price and healthy profit for their work.

If there is suspicion or tip that there is a collusive practice of bidders in the bid, the employer can manage or reduce the impact by adopting one of the above mentioned parameters depending on the condition of financial offer between the bidders.

2.4.3 Multi parameter bidding method (based on price and other factors)

A model of competitive bidding that is based not only on cost but also on other constraints was proposed by Herbs man and Ellis; they named it the multi-parameter bidding procedure (Zohar & Ellis, 1992). They suggest that the major parameters should be cost, time and quality. Under the Multi-Parameter Bid Method, time and quality concerns are each assigned

a maximum attainable number of points. The bids are then reviewed and ranked based upon these factors, as well as upon the contract cost. Again, bidders proposed project duration and past performance including quality of finished projects, safety records and the like are considered as a parameter (Zohar & Ellis, 1992).

The Ethiopian Ministry of Works and Urban Development Standard Condition of Contract for Civil Work Projects clause 14, sub-clause 14(1) states that, within the time stated in the Project Particular Conditions of Contract, the Contractor shall, after the acceptance of his tender, submit to the Engineer for his approval a schedule showing the order of procedure in which he proposes to carry out the works. Again, under sub-clause 14(4), the contractor shall submit to the Engineer two copies of the schedule of works referred to in sub -clause 14(1) above within 30 days after being notified of the acceptance of his bid (MOWUD, 1994).

2.4.4 Direct cost/fixed price contract delivery (ቁርጥ ዋጋ)

A Method of project delivery in which projects are awarded without financial offer and competition between contractors. In this contract delivery method, contract is given directly by the engineers estimate and direct cost unit rate. The selected contractors are those contractors having a history and reputation of Good performance in previous projects. Addis Ababa City Construction Bureau also delivers construction contracts using this method for newly organized MSCE in aim of creating job opportunities (Addis Negari Gazeta, 2011).
This method is common in Addis Ababa City construction bureau and the A.A city proclamation no 64/2011 of the procuring guide gives the authority to deliver necessary projects in fixed price contract delivery method (Addis Negari Gazeta, 2011).

2.5 Advantages and drawbacks of the listed bidding procedures

A) Competitive low bidding (Price-Based): Although it is generally accepted that competitive low bid method saves government budget and assures fair and unlimited competition between bidders and thus protects public interest, this traditional method has recently been criticized lately for promoting inferior quality, causing too many change orders, number of claims, furthering adversarial relationships, time overrun, increasing overall cost of the project, and termination of projects (Khan & Khan, 2015).

Knowingly or unknowingly if a contractors offers a bid that is much less than the Engineers estimate as defined by the European Union as "Abnormally Low Tender' 'the destiny of the project usually will be delay, claim even termination. The other most concerning reason is the practice of a contractor deliberately submitting an artificially low bid in anticipation of making their profit through change orders and claims (Thomas, 2009).

The public sector seems to be more comfortable with this process because the bid evaluation is not complicated. The checks-and-balance system, and integral part of this competitive process, fosters confidence with the taxpayers. Its objectivity is ensured because price is the only criterion for evaluating bids. Its vulnerability to different sorts of political and social pressure is much less than other procedures that are based on some degree of subjectivity (Khan & Khan, 2015).

B) Competitive average bidding (Price-based): In competitive average bidding procedures, the selected contractor is the one whose bid is near the average of all the bids submitted.
The main advantage is that it safeguards an owner against signing a construction contract for an unrealistically low bid price that almost certainly will lead to adversarial relationships during construction Photois, (1993).It was also pointed out that, under this method, contractors are protected from having to honor a bid containing a gross mistake or oversight.

The basic drawback of the average-bid method is that it does not necessarily encourage contractor's innovative approach to lower price in terms of technology or managerial advancements, unless the innovation is known available to all bidders. Although it has been argued that average bidding method results in significantly higher profits for the contractors in projects won (Iritshad, 1993).When such high profits are available throughout the industry, bid prices should be expected to gradually fall and the savings will eventually be passed to the owner. It has been claimed that the average bid method would increase contractor profitability and it has the potential to promote partnership relation rather than adversarial relation between the owner and the contractor (Khan & Khan, 2015).

Some major pitfalls associated with the competitive low bid method can also be prevalent with the average bid procedure. As is the case with the low bid method, collusion among the bidders and the absence of prequalification can negate its intent and produce undesirable results (Photois, 1993).

C, Other Competitive Bidding Methods (Based on price and "other" factors): Under this method factors other than price are considered before award decisions are made. This is done in a more rigorous fashion than the conventional implementation of prequalification procedure. Technical merit, time and quality-related factors in a bid proposal are being given more emphasis. Some people assert that the innovative methods are needed for the sake of time and quality, to get better value for the government money, to reduce life-cycle costs for the public body, to encourage quality and innovations, while maintaining a fair profit for the contractor (Khan & Khan, 2015).

For many years the time element was not the mandatory concern in construction projects of many countries. The element of cost was the most important one, and therefore the procurement systems were mainly for materials and equipment. However, the economic cost of delays is obviously enormous. In U.S.A for instance, a few innovative procurement systems for buying time were introduced in order to minimize those delays (Ellias & Zohar, 2017). The common denominator of all those procurement system is the ability of the contractor to procure the time for completion of the project.
The main drawback of this method may be being time taken and its need of skilled professionals during bid evaluation (Khan & Khan, 2015).

D, Direct cost contract delivery/fixed price (ቁርጥ ዋጋ):- advantageous with respect of achieving economically most advantageous contractor with optimum and logical bid price. However, no place for competition which may discourage contractors. In addition it may be vulnerable for favoritism and corruption (Addis Negari Gazeta, 2011).

2.6 Impact of least bid in project performance

The traditional low-bid approach tends to promote more adversarial relationships rather than cooperation or coordination among the contractor, the designer and the owner, and the owner generally faces increased exposure to contractor claims over design and constructability issues (Farooqui, 2008). Contractors become claim conscious mainly because they supposed to compensate the abnormal low bid price through multiple change orders and supplementary works (Farooqui, 2008).

In addition the contractor forced to use cheaper/inferior quality materials because the unit rate the firm offers may not be sufficient to buy the material quality level described in the specifications. This in turn brings, dispute and poor coordination between the contracting parties. Not only with respect to material quality, but also the contractor is forced to use poor skilled manpower in favor of paying minimum labor wages which directly reduce the performance of projects in quality (Gebru, 2018).

The traditional competitive system also may affect the schedule of a project to delay. The main reason for this may be due to delay in material deliverance, equipment shortage, financial shortage and sufficient skilled manpower loss in the project. The least bid awarding system may also play a negative role on cost of a project cause the now and then terminations and multiple bids brings cost overrun in project cost (Gebru, 2018).

Due to exaggerated delay and poor quality observed on performance of the project, the public body is forced to terminate the project. On the contrary, the advance payment issued at commencement of the project may not be fully returned by the contractor as per the contract agreement. In due case, unnecessary public money wastage will happen. This is common with MSCE contractors because they are not asked to submit unconditional advance guarantee from bank (Mechegiaw, 2012).

2.7 Other countries practice-bench marking

2.7.1 The Legislation in the European Union Countries

The EU introduced legislation to allow public sector clients the option of awarding a construction project using either the traditional low bid or the Economically Most Advantageous Tender (EMAT) (Bochenek, 2014). EMAT refers to a bid or offer which when taking into account a number of criteria including but not limited to price, quality, delivery, technical merit, compatibility, functionality and overall cost effectiveness affords the client the most economically advantageous solution (Bochenek, 2014).

The Public Procurement Law in the EU countries has changed several times. In 2004 two EU Directives were implemented, enabling a codification of rules and procedures across EU countries (Bochenek, 2014). They are:

Directive 2004/18/GC of the European Parliament and of the Council of 31st March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts (Bochenek, 2014).

Directive 2004/17/GC of the European Parliament and of the Council of 31st March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors (Bochenek, 2014).

All EU member states have implemented the Directives in their national legal systems.

According to the Directives it is allowed to use only two criteria of contract award: "the lowest price" and "the most economically advantageous tender" (MEAT) (Bochenek, 2014).

According to article 53 of 2004/18/EC Directive: quality, price, technical merit, aesthetic and functional characteristics, environmental characteristics, running costs, cost-effectiveness, after sales service and technical assistance, delivery date and delivery period or period of completion, (Bochenek, 2014).

According to article 55 of 2004/17/EC Directive: delivery or completion date, running costs, cost-effectiveness, quality, aesthetic and functional characteristics, environmental characteristics, technical merit, after sales service and technical assistance, commitments with regard to parts, security of supply, and price.

All criteria, as stated in the Directives, are exemplary and there are no obstacles to apply other than those indicated, but with the provision that by applying the criteria the contracting authorities will be able to compare and evaluate offers in the way to guarantee equal treatment.

The appointment of the contractors in selected EU countries

Table 1 Proportion of chosen contract award criteria in open procedures in selected EU countries.

No.	Country	Year(G.C)	2013	2012	2011	2010	Average
1	France	MEAT	91.0%	90.5%	91.0%	91.7%	**91.10%**
		Lowest Price	2.8%	2.9%	3.10%	2.9%	**2.90%**
		Not Specified	6.3%	6.7%	5.80%	5.4%	**6.10%**
2	UK	MEAT	88.70%	84.10%	87.50%	88.8%	**87.30%**
		Lowest Price	9.90%	12.20%	8.50%	8.50%	**9.80%**
		Not Specified	1.40%	3.70%	4.00%	2.70%	**3.00%**
3	Ireland	MEAT	60.50%	74.30%	89.30%	98.20%	**80.60%**
		Lowest Price	38.20%	25.70%	10.70%	1.80%	**19.10%**
		Not Specified	1.30%	0.00%	0.00%	0.00%	**0.30%**
4	Spain	MEAT	78.60%	81.90%	81.90%	86.60%	**82.30%**
		Lowest Price	7.90%	5.70%	6.60%	4.70%	**6.20%**
		Not Specified	13.50%	12.40%	11.50%	8.80%	**11.60%**
5	Italy	MEAT	61.30%	64.80%	64.00%	59.90%	**62.50%**
		Lowest Price	32.50%	27.80%	32.80%	35.50%	**32.20%**
		Not Specified	6.20%	7.30%	3.20%	4.60%	**5.30%**
6	Portugal	MEAT	59.60%	56.60%	70.10%	73.50%	**65.00%**
		Lowest Price	11.50%	12.50%	5.60%	6.90%	**9.10%**
		Not Specified	28.80%	31.00%	24.30%	19.60%	**25.90%**
7	Czech Republic	MEAT	23.60%	42.10%	56.00%	66.90%	**47.20%**
		Lowest Price	75.80%	57.80%	43.90%	33.10%	**52.65%**
		Not Specified	0.60%	0.10%	0.10%	0.00%	**0.10%**
8	Netherlands	MEAT	55.30%	30.40%	28.10%	26.70%	**35.10%**
		Lowest Price	43.70%	69.50%	71.90%	73.30%	**64.60%**
		Not Specified	1.00%	0.10%	0.00%	0.00%	**0.30%**
9	Sweden	MEAT	18.60%	25.30%	35.30%	36.00%	**28.80%**
		Lowest price	41.40%	40.40%	37.80%	41.70%	**40.33%**
		Not Specified	40.00%	34.30%	26.90%	22.30%	**30.90%**

Source, (Bochenek, 2014)

2.7.2 The appointment of the contractors in African Countries

Egypt and Ghana

In Egypt, the methods used for contractors' evaluation and selection shows that the single stage tendering method is used for smaller projects (project size<1 Million LE). However, for medium-size, large, and mega projects, two-stage tendering is used for contractors' evaluation and selection. The first stage, the prequalification stage, identifies those companies to be considered suitably qualified and experienced to undertake the project. The second stage, the bidding stage, a detailed assessment of all responsive bids (bid evaluation) is made in order to award the contract to the best bid. Also the point system is widely used in evaluating the contractors' bids in both the pre-qualification and the bid evaluation stages (Saalama, 2006). Referring (Saalama, 2006), Weights used for bid evaluation process in Egypt are shown based on project type and project size, Table 2 and 3 below shows average weights used for bid evaluation when projects are classified by project type and size.

Table 2 Average weights used for bid evaluation classified by project types

	Buildings	Utilities	Industrial	Electro-Mech.	Others
Technical (%)	31	40	43	48	50
Financial (%)	69	60	57	52	50

Source, (Saalama, 2006)

Table 3 Average weights used for bid evaluation classified by project size

	<1 M	1-5 M	5-10 M	10-20 M	> 20 M
Technical (%)	0	30	32	38	40
Financial (%)	100	70	68	62	60

Source, (Saalama, 2006)

In Ghana, two types of evaluating bid methods are widely used in the building construction industry. One is the lowest evaluated tender price, and the other is multi criteria quantitative method. However, the selection of the contractor based on the lowest tender which is supposed to be used for selection of contractors for government projects as requirement contained in the Public Procurement Act may be one of the major reasons causing project delivery problems, as Contractors often quote low prices and subsequently attempt to reduce the quality of work and hope to be compensated by submitting claims (Hatush, 1998).

2.8 Construction Industry Ethiopian Context

The competitive bidding process for awarding construction contracts in Ethiopia is typically based on the low-bid method. The monitoring body PPA proclamation number 649/2009 article43 (8a) (PPA, 2009) states the successful bid shall be the bid found to be responsive to the technical requirements and with the lowest evaluated price.

2.8.1 Public procurement policies and Guidelines

2.8.1.1. Public and commercial (Private) procurements comparison

Differs in Length, intimacy of relationships and Transparency Policy objectives. Public procurement necessarily includes social and political objectives. However, public and commercial procurements are similar in terms of Economy and Systematic approach to planning, selection and follow-up (PPA, 2009).

2.8.1.2 Public procurement organizations

Public procurement organizations essentially require basic elements of Procurement Arm which includes respect for regulations, record of actions/decisions and proper accounts. The second basic public procurement essential requirement includes enforcement/review arm which in turn includes prior review and auditing. The last basic requirement is the monitoring body (PPA) who is accountable for FDRE Ministry of Finance and responsible to control of major procurements, draft/update regulations, general guidance to contracting agencies and staff development and training programs (PPA, 2009).

2.8.1.3 Public procurement Principles and Essential Features

In order to achieve sound procurement practice and preserve public trust and public interest, procurement principles must be applied (MOF, 2013, p. 5). As per (Federal Negarit Gazeta) (2009) public procurement and property administration shall have to comply with the following principles of Value for money (Economy, Efficiency, and Effectiveness), Transparency, Nondiscrimination (fairness), Accountability, Preferential treatment of local companies and Risk Management principles (PPA, 2009).

1. Economy and Efficiency

Considering economy the Purpose of procurement is to get value for money whether measured in lowest initial price or life-time cost. In addition, Efficiency refers procurement must achieve prerequisites of right time, right quality, right quantity, right source and delivery to right destination.

2. Fairness

Offering level playing ground for all bidders: including advertising, time for bid submission, cost of bid security, letting bidders know upfront the evaluation criteria, Accessibility (easy accessible condition for bidders for having the bid document), Impartiality, Nondiscrimination (issue of different criteria for local and foreign), Consistency in application of procedures, Reliability and Formality.

3. Transparency

This principle includes establishment and maintenance of rules and procedures that are accessible and unambiguous e.g. public bid opening, Elimination of arbitrariness, Checks and balances on discretionary powers and no negotiation before award.

4. Accountability and ethical standards

Accountability and ethical standard principle of public procurement indicates Procurement staff are responsible for enforcing and obeying the rules.in addition forces procurement staff subject to challenge and sanction for neglecting and bending rules related with Key bribe to individual and institutional honesty and avoidance to collusion and corruption .

Essential features of public procurements includes

1. Eligibility: All members

2. Advertising: Mandatory. Must be effective and allow all eligible bidders opportunity to bid.

3. Qualification criteria: Rational and non-discriminatory

4. Technical specifications: Broad, Performance-based, not favor a specific supplier

Bidding must be Competitive Non-restrictive/discriminatory Clear and objective evaluation criteria in the instructions to bid transparent process, Award to the LEB using stated criteria and without prior negotiation.

2.8.1.4 Procurement documents

Legal Framework

Table 4 Legal frame work of procurement documents

Federal	AA
Proclamation No. 649/2009	Proclamation No. 17/2009
Directive, June 2010 and amendments	የግዢ አፈፃፀም መመሪያ ቁጥር 3/2002 እና ማሻሻያ

Source :(Document Review, July 2021)

PPA conditions

The weights given for contractor selection will be the least price offer from those bidders passing the technical evaluations usually more than 70%. PPA proclamation number 649/2009 article43 (8a) (PPA, 2009) states the successful bid shall be the bid found to be responsive to the technical requirements and with the lowest evaluated price.

The consultant selection PPA 2011 under article 1, sub article 5.6 (selection methods and conditions for use) states that the evaluation and selection of consultants shall be carried out in accordance with the following methods (PPA, 2011):

1. Quality and Cost Based Selection (QCBS);
2. Quality Based Selection (QBS);
3. Selection under Fixed Budget (FBS);
4. Selection of Consultants Qualifications (CQS);
5. Selection Based on Least cost

Considering the above listed consultant evaluation methods, the Quality and Cost Based Selection (QCBS) is the preferred sub-method that shall be used in most cases. QCBS uses a competitive process among short-listed consultants that takes into account the aggregate value of both quality of the proposal and cost of the service in selecting the successful firm. QCBS method somewhat matches with the Egyptian bid evaluation system for projects above 1Million LE because both systems adopt average weights of both technic and finance to evaluate bids.

This section of the literature review part tries to discuss on systems and weights given in due process of awarding construction contracts in Europe and Africa. The data from European Union countries shows that the dominant selection criterion is being MEAT rather than lowest price or other parameters. This is somewhat effective selection system from the researcher point of view that unlike the least bid assures to select the right contractor for the intended purpose.

The Egyptians systems show that the technical and financial weights given differ according to the type of project to be built and size (cost) of the project. The researcher examines percentage weights given are effective but stricture on why technical evaluations are not included for projects sizes under 1M Egyptian pound.

The contractor selection for PPA conditions states the responsive bidder is who submits the lowest price from those technically fit bidders. The least bidder may be Abnormally Low bidder meaning the price offer may be much more less than the estimations.

Analyzing the conditions and the current construction procurement trends on the public body, the researcher strictly opposes lowest bidder system adopted by PPA. Because unlike the Europeans the monitoring body did not allow the client to choose EMAT or the lowest bidder observing the conditions under that each specific procurement held. Unlike EMAT, least bid system brings delay, cost overrun and number of terminations on projects. There have to be system of check and balance in order to assure government budget is used on public body in well exhaustive manner.

2.9 Research Gap

In Ethiopia, the dominant bid evaluation procedure practiced in public body is obviously the traditional least bid procedure. The procurement preparation, tendering, tender evaluation and notice of acceptance necessarily needs to be done properly by adopting effective and adequate parameters. The current construction era justifies there exists growth with respect to advancement and complexity in construction and owners interest. On the contrary, the condition forces stakeholders to apply alternative forms of project delivery systems. Relatively the bid evaluation and contract delivery system is not updated specially on public body projects.

As discussed in previous portions the traditional bid evaluation procedure has its own merits and demerits. Encouraging rivalry between contractors is a paramount importance to the method. In addition, the process is beneficial specifically to the public sector because of the transparency, an important criterion of public policy (Photois, 1993). However, allowing projects to be awarded based on the least price has inherent flaws. Delays in meeting the contract duration, increment of the final project cost due to high variations, tendency to compromise quality, and adversarial relationship among contracting parties are the major drawbacks associated with responsive low bid award procedure (Bedford, 2009).

According to (Hardy, 1978), the criteria used for bid evaluation should reflect the client's objectives. These are that bids are fully responsive to the contract and bidders are sufficiently well qualified to undertake the contract. The criteria for selecting the successful bidder are then that bid which maximizes the return on the client's investment. Thus he has proposed that bidders should submit a schedule of the payments they expect to fall due to them during the contract.

In a survey conducted in the Oromia regional state, non-existence of real competition during contractors selection; excessive time overruns; compromising quality; and escalation of the final project cost from the estimated cost were the major problems associated with the existing approach of delivering projects Mosisa, (2006). Poor initial funding of the project by the contractor and lack of timely resources of materials, machineries and workforces are also the major factors identified as causes of delays during the construction phase in Ethiopian construction industry Abdo, (2006).The construction process involves multi-organizational activity. Conflict and disputes can therefore exist at all levels in the contractual chain: between client and consultant, client and contractor, client and sub-contractor, and so on. Among many causes of disagreements in the construction project, the project delivery system selected is one of the significant elements (Bekele, 2005).

Mechigiaw (2012), studied lowest bidding bid award and project performance on public building projects, then he found low quality of work, excessive delay and on some projects an extent of structural failure had observed and he had concluded these poor performance mainly arise from selection of contractor on lowest bid bidder award system.

Gebru (2018), Absence of minimum financially offer threshold on the public procurement regulation, projects are awarded to abnormally low offer on least offer bases and apparently those projects are suffering financial and quality problems. The study shows that absence of minimum bid evaluation technical criterion and sub criterions in the procurement manual has lead the public procurement units to exercise different scope of requirements for similar projects. As well as setting subjective criterion on bid evaluation has become the fifth most influential problem on the current bid evaluation and contractor selection process non-residential public building projects.

Unlike the above studies this study mainly focuses on impact of least bid especially those offers even much below the engineering estimates (Abnormally low price) on project performance of public Building projects under Addis Ababa construction bureau. Again, try to forward recommendations for developing a proposal for implementing alternative bid-evaluation and contract award procedures for the public body.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is the particular master plan and line of action used to distinguish, pick out, undertake, and examine information about a study area. In a research paper, the methodology portion allows the reader to deeply evaluate and analyze a research's overall quality. According to Goundar (2012), research methodology is expected to answer:

(1) What is the purpose of the research?

(2) How did researcher draw a statement of the problem?

(3) What types of data were collected?

(4) What particular method has been used?

(5) Why was a particular technique of analysis of data used?

This chapter presents the methodology used to assess impacts of the least bidder award practice on the performance of public building project: the case practice of projects undertaken by Addis Ababa City Construction bureau. Accordingly, it is organized in sections of research methodology type, study design, method of data collection, sampling techniques, reliability and validity test and data analysis techniques as shown below.

3.2 Type of Research Methodology

As ascertained by reputable researchers, we can conclude that there are two main types of research methodology, 1- Quantitative methodology, and 2- Qualitative methodology.

According to Goundar (2012) , Quantitative research depends on quantification of data. In

Applying quantitative methodology, process is elaborated in terms of on\e or more quantities. On the other hand, according to Goundar, (2012) Qualitative research is concerned with qualitative incidents involving quality. It does not relate or express in terms of numbers, illustrative, adopts logic reasoning and utilize verbal opinions. Its aim is to get the meaning, feeling and describe the situation.

This study employed both qualitative and quantitative research approach. It is qualitative because the research problem requires assessing the impact of least bidder award practice on the performance of public building project using logical reasoning and describing the situations in verbal opinions . Again it is quantitative because quantifies and analyze the data in terms of frequency and percentages that were collected in questionnaires and document review form.

3.3 study design

According to Goundar, (2012), Research study design is a structure, or set of methods and guides used to gather and examine information on variables determined in a specified study problem. The research design of this study is descriptive type as it tries to describe impact of least bid evaluation on project performance. Case study research design adopting questionnaires and document review as data collecting instrument were also the study design.

3.3.1 Source and Tools of Data Collection

3.3.1.1 Method of data collection

There is a wide range of methods available for collecting data covering human participants, but the three main methods of collecting survey data are:

1. Interviews
2. Questionnaires
3. Document review

The selection of the appropriate method depends upon a number of factors; including access to potential participants/respondents, the literacy level of respondents, the subject matter, the motivation of the respondents and resource available.

1. Interviews

Personal interviews are very labor intensive, but can be the best way of achieving high quality data. Face-to-face interviews are preferable when the topic is very sensitive, but not individual and when the questions raised are uncomfortable to be coded. In addition interviews are convenient if the interview is likely to be lengthy.

2. Questionnaires

These are research instruments comprising of a series questions for collecting opinions from the target group. They can be cheaper than personal interviewing and quicker if the sample is large and widely dispersed. In addition, the method is easier, puts less pressure on the respondents, favorable to widely cover and uniform.

3. Document review

Document review is a system of gathering information by revising existing documents. Advantageous because relatively inexpensive, good source of background information and unobtrusive. The method is sometimes inefficient due to information may be inapplicable, information may be incomplete or inaccurate and could be time consuming to collect, review and analyze many documents.

3.3.1.2 Data Collection Instrument employed for the Study

The data for this study were collected using questionnaires and document review using data sheets. In these case data sheet refers to a document containing a summary of data or other useful information including summary of bidders financial evaluation after arithmetic check, current status of the project, evaluation of contractors performance and major obstacles observed during the construction process.

Why Questionnaire and Document Review?

Questionnaires are used because they provide both quantitative and qualitative data, uniform, cheap and quick relatively compared to other instruments. Not only these but also the researcher needs necessarily to gather data from professionals working in bid evaluation and contract administration teams. On the contrary, respondents may need confidentiality and privacy so that questionnaire is best to provide what they require**.**

Document review is also basic because the performance of any project can be referred from documented history of that specific project starting from planning, commencement up to closing stage. Then, it is preferable to analyze the data of a least bid evaluated project to proof whether the procurement method used had a negative or positive impact on the project performance of that project or not.

Data obtained from target employees of the case study firm and private construction companies (contractors and consultants) by raising questions were primary data. In these case, the private construction companies are contractors and consultants participating in public construction projects of Addis Ababa city construction bureau. Questionnaires were prepared for employees of the firm at main office and sub city levels those directly linked to the procurement system namely procurement engineers and contract administrators. The questionnaires were prepared in English language.

What did questionnaires answer?

The questions mainly focus on answering the questions raised to achieve the objectives elaborated on introduction part of the study. Including frequency of respondents business obtained under different project delivery and bid award methods, satisfaction of respondents on the current bid evaluation procedure in use by the Bureau, ratings of respondents to give their rating of the different project delivery and bid award methods, impact of least bid awarding on performance of projects, the suitable awarding systems better to be adopted from the respondent point of view. In addition, educational background and relevant experience as employee of the organization are included to understand respondent's profile.

Document Review Using Data Sheets

The second data source to collect information was the document review. Performances of projects were examined by referring their file, site diaries and related reliable documents from the organization and consultants who are administrating public building constructions projects.

The desk study mainly focuses on those projects commenced after 2011E.C and awarded on least bid evaluation method with their current performance in terms of cost, time and quality. The review concentrates on projects commenced after 2011E.C fiscal year in favor of getting current information. Not only this but also directorates reminds that well organized documents of projects are available after the 2011E.C because the bureau were restructured after the described fiscal year.

What type of research questions did document review answer?

The document review answers basically the research question of current bid evaluation system impact on performance of public projects. The information obtained includes summary of financial bid evaluation, status of projects awarded on the least bid awarding system, major difficulties encountered during each step of the construction process, evaluation of project performance in terms of the three constraints(quality, cost and time).
The documents to be reviewed are public owned construction projects awarded on a least bidder bid awarding system.

3.3.2 Sample and Sampling Techniques

The researcher takes Addis Ababa City Construction Bureau as a case study considering the bureau is only responsible in constructing public construction projects and necessarily participates Micro and Small Construction Enterprises during every construction projects. Not only these but also the bureau encompasses all stakeholders together at a place in construction process of every project from commencement up to closing stage.

The target populations for this research study were professional employees of Addis Ababa city construction bureau and professionals from consultant and contractor side. The study uses purposive sampling. The main reason to use purposive sampling is to focus on those respondents directly exposed with the study area namely engineering procurement engineers and contract administrators.in addition, the target respondents are those having minimum relevant experience of 2 years with first degree and above.

According to the information obtained from human resource departments, the New Professional employee Structure adopted in 2011E.C at Main Office Level includes:-

1. **Under Engineering Purchase Directorate** excluding supporting staff like secretary, documentation, there are 13 Engineering procurement Engineers at core process.
2. **Under Contract Administration Directorate** excluding supporting staff the bureau has 33 Contract administration Engineers at core process.
3. **Under Construction Audit Directorate** excluding the supporting staff the bureau has 9 Construction Audit Engineers at core process.
4. **Under project Study and Design Standard Supervision Directorate** without supporting staff the bureau has 11 professional engineers.
5. **Under Optional Technology Directorate** 17 professional employees.

According to the new employee structure adopted in 2011E.C, at sub city construction bureau level the total manpower of the bureaus was 31 permanent core process employees at different levels of hierarchy.

According to the information obtained from human resource department, Per Sub City level Construction Bureau Have

17 employees of contract administration team
6 employees of Engineering purchase team
5 employees of construction audit team and
5 employees of construction and design professional's competency team.

Because same number of employee exists in all sub city according to the structure, there is 33*10=330 total professional employees at sub city level.

From direct stakeholder's side the study focus on the contractors and consultants because the topic of the study directly concentrates on works bid evaluation practice and obviously the contract delivery method adopted on the bureau is DBB/design-bid-build.

Sample size and study population

Study population is the actual sampling frame from which the study is going to draw sample size. The study applies purposive sampling as discussed in section 3.3.2 and questionnaires were distributed for those respondents directly exposed and affected by the current bid evaluation and contract delivery system. Therefore, the researcher considers only those employees at engineering purchase and contract administration departments both at main office and sub city level.

Engineering purchase team is responsible to administer the procurement process starting from planning, advertisement then bid evaluation up to contract awarding. Whereas, Contract administrators are responsible to administer the contract from commencement up to closing stage.

Study population at main office

Referring the information obtained from the human resource department, the total number of study populations considering the main office are **46** professionals. Which stands for **13** procurement engineers from engineering procurement directorate and **33** contract administration engineers from contract administration directorate.

Study population at sub-city

According to the information's obtained from the human resource department of the sub city construction bureau there are **6** Engineering procurement engineers and **17** contract administration engineers per sub city. Totally, there are **(17+6)*10=230** study population considering the 10 sub cities.

Therefore there are, **46+230=276** respondents from client side. Due to the limited time and finance available, the study populations from private construction companies are only those professionals participating on those **21** projects investigated under the desk study. Totally, the researcher distributes **20** questionnaires each for contractors and consultant sides.

Finally, from both the client side and private companies there are **40+276=316** study populations.

Consultant side respondents Grade, project Contract amount and scope of work are illustrated below in tabular form:-

Table 5 Consultant side respondents profile

NO	GRADE	CONTRACT AMOUNT	SCOPE OF WORK
1	5	185,250	Supervision
2	5	185,250	Supervision
3	4	214,000	Design & Supervision
4	3	169,350	Supervision
5	3	230,000	Supervision
6	4	214,000	Design & Supervision
7	2	1,548,000	Design ,Supervision & Cont.Admin
8	5	104,000	Design & Supervision
9	5	270,000	Design & Supervision
10	2	948,000	Design & Supervision
11	1	2,058,500	Design & Supervision
12	1	1,355,740	Design ,Supervision & Cont.Admin
13	MSCE-2	10,000	Supervision
14	MSCE-1	29,565	Supervision
15	MSCE-1	24,000	Supervision
16	MSCE-2	28,000	Design Modification & Supervision
17	MSCE-1	44,995	Design & Supervision
18	MSCE-1	48,000	Supervision
19	MSCE-2	10,000	Supervision
20	MSCE-2	58,650	Design Modification & Supervision

Source: (Document review, July, 2021)

Respondent's background

The target population to respond are professionals having BSC Degree and above in Civil engineering or Construction Technology Management with minimum relevant experience 2 years and above. The reason for this criterion is to collect information from well experienced and skilled respondents.

Size of sample for questionnaire

To minimize the sampling error, determining the sample size from the target population (316 considering this study) have to be done. To determine the size of the sample, this study had used Taro Yamane's simplified formula (Taro, 1967):

$$n = N\ (/1+\mathrm{N}\ (e^2))$$

Where n is no. of samples, N is total population (Target Population) and e is error margin or the range in which the true value of the population is estimated to be. The common confidence level in many researches are 90%,95% and 99% .considering the overall conditions observed during survey, the researcher assumes level of confidence to be 90%.therefore ,the level of precision or sampling error to this study were assumed to be ±10%.

$$\text{Therefore, } n = 316/\ (1+316(0.1^2))$$

$$\boldsymbol{n = 75.96 \approx 76}$$

Thus, sample size for this study was **76** professionals from both Addis Ababa city construction bureau and private construction companies (consultants and contractors).

3.3.3 Research process

The research was started with literature reviews. Based on the information acquired from literature reviews and input from various local experts, questionnaires were developed for survey exercise. The research problem, initiated from observations through document review and discussion with professionals working in the industry particularly the sector where projects that are suffering in the least bid procurement system.

The research basic information is assessed in question and document review part of the research. Once the variables are identified through literature review and inputs from experts, research instrument preparation and data collection have been executed in their order. Consequently, analyses of the data obtained from questionnaires were processed using Statistical Package for Social science (SPSS) software.

Data processing through SPSS involves editing, coding, tabulation which were used as key factors in the whole process of research. This was done in order to make the research accurate and effective.

On the other hand, the document review is analyzed using simple statistical approach, descriptive analysis, examining, tabulating and categorizing based on the chosen measurement scale. After the collected data is analyzed, the findings and results are discussed. Finally, the research conclusion and recommendation drawn based on the analysis and result output.

3.3.4 Reliability and validity

Reliability and validity are parameters used to measure the efficiency of research. They predict how properly a mechanism, technique or test measures something. Reliability refers the uniformity of a measure, and validity refers the precision of a measure.
The tests detect the degree by which the responds are occurring again if the survey is conducted again under identical situations. In addition, they check the range to which the responds in fact measure what they are expected determine.

The validity and reliability of this study was measured using Triangulation and SPSS software. Triangulation was used as to test validity through the convergence of information from different sources. The information collected from professionals of the public body, consultants and contractors participating on public projects undertaken by Addis Ababa city construction bureau were triangulated to check the reliability and validity of the study questions. The primary data were collected by distributing questionnaires and document review by the Researcher himself.

Validity and Reliability check using SPSS

Validity: applying basic steps on SPSS, the data is said to be valid if the value of significance of the data is no more than **0.05.** When we consider the result of this study the significance value of the data is **0.000**.therefore we can conclude that the research is valid.

		TOTAL
X01	Pearson Correlation	.592**
	Sig. (2-tailed)	.000
	N	63

Reliability: Generally, in performing the reliability test using SPSS, the data is said to be reliable if cronbach's Alpha value is closer to 1.again,

If cronbach's Alpha value = 0.6 it is ok.

>> >> = 0.7 it is Good.

>> >> = 0.8 it is Very Good.

>> >> = 0.9 it is said the scale is having excellent internal consistency or external reliability.

Considering this paper work, the cronbach's Alpha value of this study is 0.75.therefore, we can conclude the study is good in terms of reliability.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.750	.926	32

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 General

The Questionnaires were distributed to Addis Ababa city construction bureau professional employees both at main office and the 10 bureaus at sub city levels. The questionnaires were also distributed for consultants and contractors participating on the public building projects of the case study bureau. Respondents were selected on purposive sampling technique and formula is applied to reduce sampling error.

In addition Information regarding public building construction projects were also collected and analyzed through desk study.

4.2 Questionnaire response rate

A total of 76 questionnaires were distributed as shown on the methodology part of the paper. Returned questionnaires and their response rate are summarized in tabular form as follows.

Table 6 Summary of number and response rate of participants.

No	Participants	Distributed in	Returned in	Response Rate in %
1	professionals from case study firm	36	33	**91.66**
2	Consultants	20	16	**80.00**
3	Contractors	20	14	**70.00**
	Aggregate	**76**	**63**	**82.89**

The researcher distributes 20 Questionnaires each for consultants and contractors and 36 for case study bureau professionals systematically. This is done to distribute questionnaires in proportion with number of target professionals calculated earlier. In addition to questionnaires, projects information were collected through 21 data sheets. The projects were collected both from main office and sub city bureau. The researcher primarily focuses on projects with relatively organized document to make the research accurate and effective.

4.3 Survey Results

4.3.1 Survey Results Obtained Through Desk Study

4.3.1.1 Summary of Number of Bidders

In the researcher's attempt to collect data, financial evaluation reports of 21 projects were obtained. The number of bidders in the survey is analyzed in tabular form as follows.

Table 7 Summary of number of bidder

Number of bidders in one project	Frequency	Percent	Cumulative Percent
1-4	10	47.6	47.6
5-10	8	38.1	85.7
>11	3	14.3	100.0
Total	21	100.0	

Source :(Document review, July 2021)

The average of responsive financial offer, engineering estimation, vanquisher offer and Grade of the contractor is summarized in table 8 below.

Table 8 Summary of projects financial status

average financial offer of responsive bidders(I)	Engineering estimation (II)	vanquisher's offer (III)	III/I*100(percent)	III/II*100(percent)	Grade of contractor	Grade of consultant
5,571,709.61	5,698,295.50	5,571,709.61	100	97.78	GC-4	MSCE 1
5,514,769.93	5,400,173.14	5,514,769.93	100	102.12	GC-5	MSCE 2
5,973,524.61	5,678,219.76	5,560,262.52	93.08	97.92	GC-5	MSCE 1
5,617,965.03	5,190,661.55	5,110,795.39	90.97	98.46	GC-6	MSCE 1
3,573,704.23	3,688,911.00	3,306,870.15	92.53	89.64	GC-5	MSCE 1
3,144,982.63	4,120,904.70	2,676,016.50	85.09	64.94	GC-6	MSCE 1
1,682,868.68	1,500,069.28	1,682,868.68	100.00	112.19	GC-5	MSCE 1
1,554,323.12	2,003,591.15	1,392,662.20	89.60	69.51	MSCE(GC-7)	MSCE 1
1,901,087.67	1,599,203.00	693,886.30	36.50	43.39	MSCE(GC-7)	MSCE 1
1,016,559.37	1,199,719.23	805,440.02	79.23	67.14	MSCE(GC-7)	MSCE 2
868,033.52	1,456,398.08	723,738.70	83.38	49.69	MSCE(GC-8)	MSCE 1
880,595.04	1,129,679.30	554,218.20	62.94	49.06	MSCE(GC-8)	MSCE 2
2,778,660.70	3,699,417.40	2,255,883.98	81.19	60.98	MSCE(GC-8)	MSCE 2
376,313,380.70	NOT FOUND	328,943,336.09	87.41	NOT FOUND	GC-1	GRADE 1
149,072,014.44	NOT FOUND	139,317,871.65	93.46	NOT FOUND	GC-2	GRADE 1
25,523,098.05	NOT FOUND	23,292,688.37	91.26	NOT FOUND	GC-1	GRADE 3
1,114,371.34	NOT FOUND	1,114,371.34	100.00	NOT FOUND	MSCE(GC-9)	MSCE 2
60,457,155.00	NOT FOUND	52,166,726.55	86.29	NOT FOUND	GC-3	GRADE 1
4,566,521.00	NOT FOUND	3,816,446.00	83.57	NOT FOUND	GC-4	GRADE 5
7,276,067.00	NOT FOUND	5,500,000.01	75.59	NOT FOUND	GC-5	GRADE 5
8,001,450.85	NOT FOUND	7,565,367.85	94.55	NOT FOUND	GC-4	GRADE 5

Source :(Document review, July 2021)

The desk study found out that, from the 21 project's investigated four projects with 100% ratio of vanquisher to bidder's average were found. These was because there was only one bidder (winner) left for financial evaluation.10 projects (50%) were awarded to the least bidders whose offer were between 80-99% of winner offer to bidders average ratio.2 projects (10%) were awarded to successive bidders whose amount were between 60-79% of winner to bidders average ratio. Only 1 (5%) bid is awarded to a bidder whose winning offer to bidders financial average is 36.5%.

The document review also found out, financial evaluation reports of 13 projects with engineering estimations. 2 projects (15.4%) were awarded for least bidders whose offer was above 100% of winning price to engineering estimation ratio. 4 projects (30.76%) were

transferred to the least successful bidders whose offer was between 80-100% of winning amount to engineers estimate ratio.

7 projects (53.84%) were awarded to the bidders whose financial value was between 40-70% of winning price to engineers estimate ratio.

4.3.1.2 Current status of projects

The current physical performance of the projects, planned time, time elapsed and current efficiency were recorded and summarized in the table below.

Table 9 Summary of work progress.

Projects	**Planned/time elapsed in % (i)**	**Work done in % (ii)**	**Efficiency in% (ii/i)**	**current *status***
Pr-1	150.67	100	66.37	Completed
Pr-2	104.44	100	95.74	Completed
Pr-3	98.38	98	99.62	Completed
Pr-4	100	100	100	Completed
Pr-5	106.67	100	93.75	Completed
Pr-6	166.67	80	48	In progress
Pr-7	92.31	90	97.5	Completed
Pr-8	183.33	75	40.91	In progress
Pr-9	316.67	43	13.58	terminated due to delay
Pr-10	300	35	11.67	terminated due to delay
Pr-11	148.48	98	66	In progress
Pr-12	253.33	100	39.47	In progress
Pr-13	346.67	49	14.13	Terminated and on litigation. due to delay and poor quality
Pr-14	131.25	92	70.1	In progress
Pr-15	105.26	73	69.35	In progress
Pr-16	22	65	295.45	In progress
Pr-17	131.25	92	70.1	In progress
Pr-18	15	14	93.33	In progress
Pr-19	116.67	100	85.71	Completed
Pr-20	212.5	100	47.06	Completed
Pr-21	640.56	100	15.61	Completed

Source :(Survey Analysis, June, 2021)

As shown on the table above, from 21 projects analyzed, there are 8 projects with efficiency 85% and above. There is 1 project in progress which achieves high efficiency (295.45%) in terms of work progress. Unfortunately there are 3 projects terminated due to delay and poor efficiency under 15%.there is only 1 project completed with efficiency 15.61%.the study also found out 8 projects with efficiency between 40-85%.

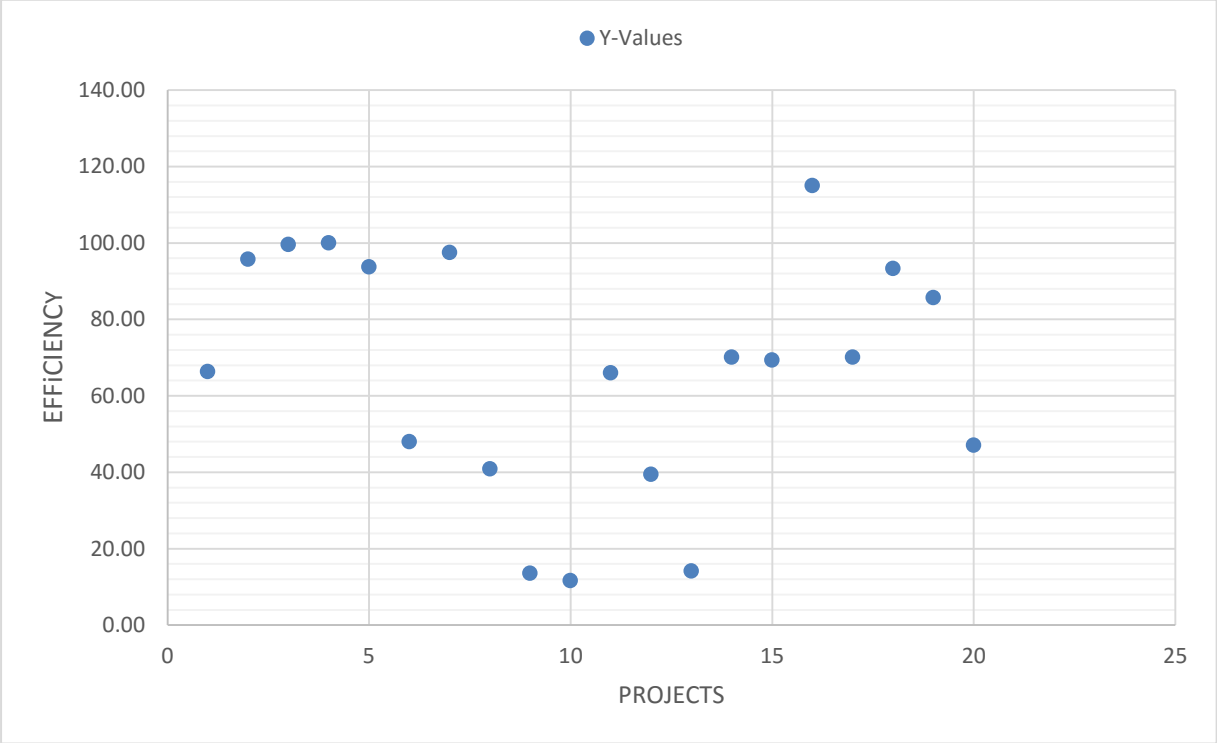


Figure 1Number of projects versus efficiency graph

The document review also tries to analyze the relationship between Efficiency and winner's to engineering estimation ratio. The study shows that mostly the efficiency of the projects increases with an increase in ratio of winner's amount to engineers estimate and vice versa. However, it seems inversely proportionality is rarely existed between efficiency and ratio of winner to engineering estimation ratio. According to the researcher's observation and discussion with professionals of contract administration the cause for this maybe material inflation, poor engineers estimate or variation and drawing related problems.

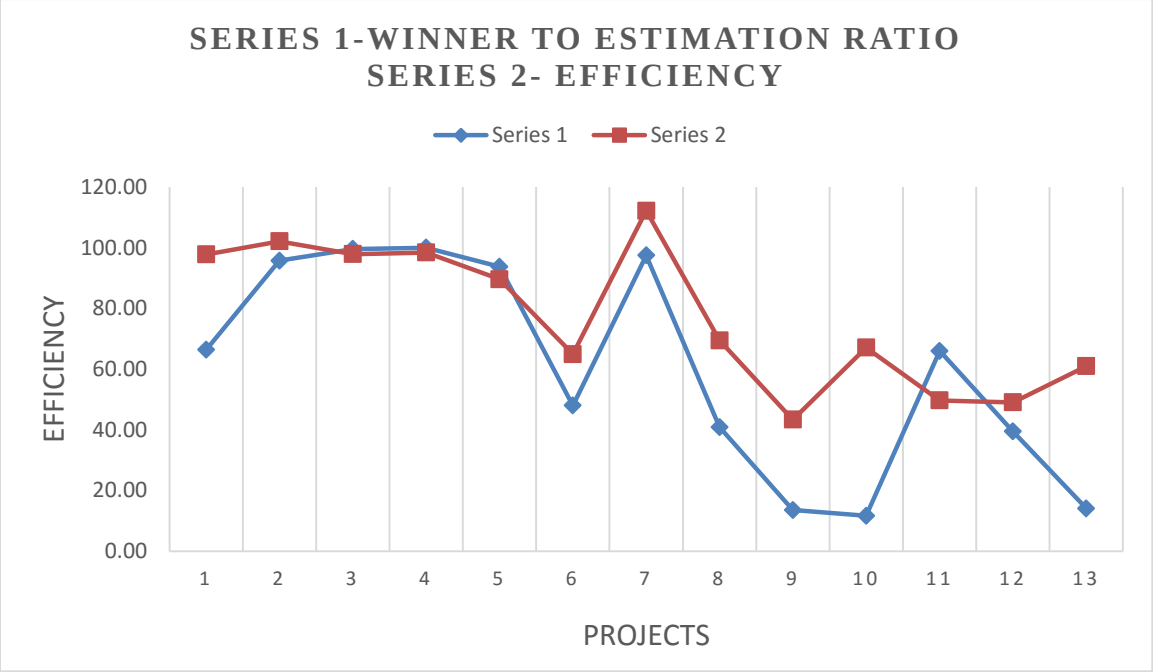


Figure 2 Relation between efficiency and winners to engineers estimate ratio

Source: (own survey, July 2021)

It looks no consistent relation exist between the efficiency and ratio of winner offer to all financial bid offers average. Because as illustrated on the Figure 3 below there exists directly proportionality on some projects like project 5-11 while there exists inversely proportionality relation between winner to average ratio and efficiency on some projects like projects 1,13 and 21.

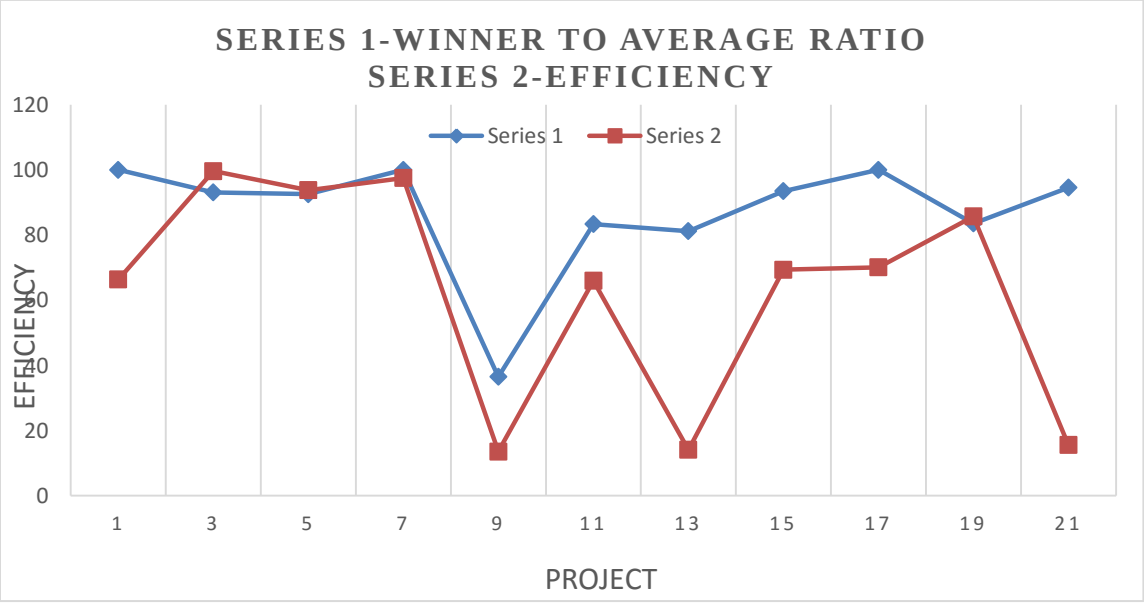


Figure 3 Relation between efficiency and winner offer to average bid offer ratio

4.3.1.3 Contractors Performance Evaluation

Contractor performance of 21 projects built under Addis Ababa city construction were also evaluated in terms of work quality, material quality, progress as per the schedule and financial standings. The findings are discussed below:-

Table 10 Performance evaluation

Grade	parameter		
	work quality(%)	material quality(%)	progress as per schedule(%)
Excellent	10	10	5
Good	40	30	20
Fair	35	45	5
Poor	15	15	70
Unknown			
Commulative percentage	100	100	100

Source: (document review, July 2021)

document review were also done on the selected projects by referring the site diary, site book, files, material approval, material test report, schedule and other related documents .the desk study found out that, 35% of the 21 projects show fair work quality whereas 70 % projects shows poor progress referring their schedule proposed before commencement of the projects. According to the discussion with contract administrators, the main reason for delay is primarily poor financial status of the contractor, material price inflation and rarely designs related problems. However, Only 5% of the projects out of the 21 shows excellent performance referring the progress and the schedule attached on the file. Again, 20% of he investigated Projects are in good condition as far as their progress as per schedule is concerned.

4.3.2 Survey Results Obtained Through Questionnaires

In addition to desk study, survey results were obtained through questionnaires from both Addis Ababa city construction bureau Engineering Procurement and contract administration directorate professionals and direct stakeholders.

4.3.2.1 Respondents educational background and relevant experience

According to the survey, about 79.4 % of the bureau and direct stakeholder professionals are BSC degree holders. Whereas, the left 20.6 % or 13 out of the 63 respondents are MSc degree holders.

The study finds out 49.2% of respondents have 2-5 years relevant experience in their positions. The study also finds out 33.3 % of the 63 valid respondents are well experienced with 6-10 years in their positions. The remaining 11.1 % achieves between 11-15 years' experience as a professional. The summaries of findings are illustrated on the following table.

Table 11 Summary of educational background of respondents

Level of Education	Frequency	Percent	Cumulative Percent
First degree	50	79.4	79.4
Masters	13	20.6	100.0
Total	63	100.0	

Source :(Own Survey Analysis, July, 2021)

Table 12 Summary of relevant experience of respondents

Number of years	Frequency	Percent	Cumulative Percent
2-5 yrs	31	49.2	49.2
6-10yrs	21	33.3	82.5
11-15 yrs	7	11.1	93.7
>16 yrs	4	6.3	100.0
Total	63	100.0	

Source :(Own Survey Analysis, July, 2021)

4.3.2.2 Description of the firms bid evaluation procedure

A. Micro and Small Construction Enterprises/MSCE/ Bid Evaluation Procedure

The study found out the firm adopts more of financial evaluation rather than technic or other factors to evaluate bid evaluations of micro and small construction enterprises. Only consultant side responds applies both systems in equal proportion. None of stakeholder participants confirm the bureau adopts bid evaluation based on price, technic and other factors. About 43 out of the 63 or around 68.3% respond the firm applies only financial comparison to award contracts to those least bidders. Some respondents respond the bureau

considers not only least bidder but also technics of enterprises to award contracts. Survey results are illustrated on the table below.

Table 13 Summary of MSCE bid evaluation Procedure

			Based on bid price onlyleast bid	Based on bid price and responsiveness on technic	Total of each stake holder
Stakeholder	Client	Count	24	9	33
		% within Stakeholder	72.7%	27.3%	100.0%
	contractor	Count	11	3	14
		% within Stakeholder	78.6%	21.4%	100.0%
	consultant	Count	8	8	16
		% within Stakeholder	50.0%	50.0%	100.0%
Total		Count	43	20	63
		% within Stakeholders	68.3%	31.7%	100.0%

Source :(Own Survey Analysis, June, 2021)

B. Contractors Bid evaluation procedure

According to the findings, Addis Ababa city construction bureau mostly adopts both price and technical responsiveness bidding procedures during bid evaluation. Even though the respondent's did not state what are those other factors, but 2 out of 16 consultants said the bureau considers other factors in addition to technic and finance during evaluations. Again, only 9 participants in client side out of 33 total respondents said the firm evaluates contractors bid evaluation only by comparing their bid price. Considering the overall findings, above 76% or 48 in frequency shows that Addis Ababa construction bureau applies the procedure of awarding construction contract for the least bidder from those technically fit candidates. Summary of the survey is illustrated below in table 14.

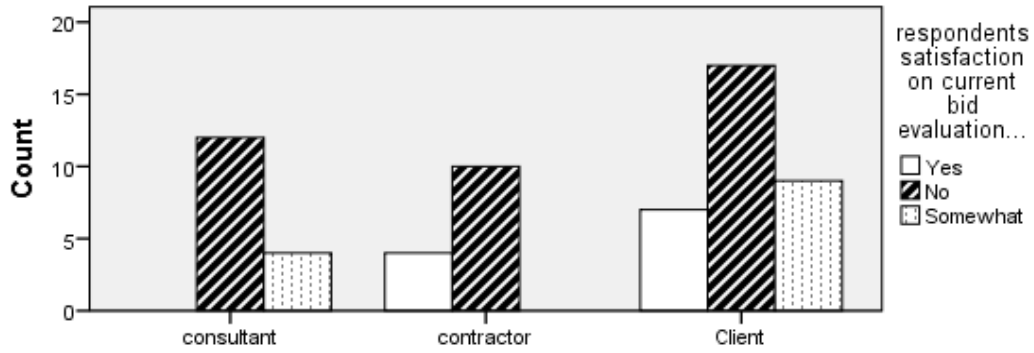
Table 14 Summary of Contractors bid evaluation Procedure

			Bid evaluation procedures for Contractos			Total
			Based on bid price onlyleast bid	Based on bid price and responsiveness on technic	Based on price,responsiveness and other factors	
Stakeholder	Client	Count	9	24	0	33
		% within Stakeholder	27.3%	72.7%	0.0%	100.0%
	contractor	Count	0	14	0	14
		% within Stakeholder	0.0%	100.0%	0.0%	100.0%
	consultant	Count	4	10	2	16
		% within Stakeholder	25.0%	62.5%	12.5%	100.0%
Total		Count	13	48	2	63
		% within Stakeholder	20.6%	76.2%	3.2%	100.0%

Source :(Own Survey Analysis, July, 2021)

4.3.2.3 Respondents satisfaction on bid evaluation procedure

Figure 4 Summary of respondent's satisfaction on bid evaluation in use



Source :(Survey Analysis, July, 2021)

The study found out above 62% of the respondents from the three stakeholders is not satisfied in bid evaluation system in practical. Only 17% are satisfied whereas the remaining 21% are somewhat satisfied on the current bid evaluation system adopted by Addis Ababa city construction bureau.

4.3.2.4 Frequency of financial bid evaluation and contract delivery method

Survey Respondents of Addis Ababa City Construction Bureau professionals, contractors and consultants were also asked to respond their frequency in percentage of the firm's financial evaluation and contract award method. Findings are illustrated on the table below.

Table 15 Frequency of financial evaluation and contract award method

No.	Frequency in %	Competitive Least bid	Negotiated	Restricted	Fixed/Direct cost
1	0% to 25%	0	0	0	0
2	25% to 50%	0	0	7	13
3	50% to 75%	3	0	0	0
4	75% to 100%	40	0	0	0

Source :(Survey Analysis, July, 2021)

According to the responses, Addis Ababa City Construction Bureau awards almost all construction projects in competitive least bid method through open procurement system. 43 out of 63 respondents select bid evaluation is on least bid base for all responsive bidders. Referring the responses, the bureau does not totally implement contract delivery through negotiation. On the other hand, participants indicate that the firm rarely adopts restricted and fixed price bid evaluation and contract award method to award projects to contractors.

4.3.2.5 Respondents ratings on chosen bid evaluation and contract delivery methods

In this part of the questionnaire, participants were asked to give their rating from their point of view on selected bid evaluation and contract delivery methods with respect to predefined features. The overall findings are illustrated below.

i. Competitive Least bid evaluation and contract award method

Professional Respondents composed from Addis Ababa city construction bureau, contractors and consultants participating in construction projects of the bureau were asked to forward their attitude on least bid evaluation method and its impact on attributes listed.

According to the respondents, least bid evaluation has negative impact on public money; that is why 42.9 % out of total or 23.8% from the client, 12.7% from contractor and 42.9% from consultant's side respond the bid evaluation method has always negative impact for gov't budget. The traditional bid evaluation method also classified as a source of profit loss for contractors and 41.3% of the total respondents claim for its negative role for contractor's gain. On the other hand, only 12.7% from total respondents claim the method sometimes have a positive effect to contractors gain profit.

About 49.2 % from total respondents said that the least bid evaluation will always have a negative impact on quality of a project. In addition 15.9% participants from consultant, 23.8% from client side and 9.5% from contractor responds that the bid evaluation method have always a negative role for quality of a project under construction. Only 2 respondents from the bureau and consultant side 3.2% responds that the least price bid evaluation method sometimes have a positive effect on quality of a project.

According to the respondents, 25.4% from bureau, 11.1% from contractor and 7.9% from consultant side said that the system of bid evaluation in least price base will always bring a project performance to delay. Not only these but also 12.7% from client and 7.9% from contractor side responds the described bid evaluation method sometimes makes a project to delay.

44.4% of respondents respond that the least bid evaluation exerts negative impact on schedule of projects. Only 7.9% respondents from consultant side responds the least price bid evaluation and contract delivery method has no effect on duration of a construction project. None of respondents respond the evaluation method helps a project to finish on desired schedule. The overall findings of the survey are briefly discussed in the tables below:-

A. Effect of least bid evaluation on government budget

Table 16 Respondent's opinion on impact of least bid on public body budget

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	
Stakeholder	Client	Frequency	3	15	10	3	2	33
		Percentage	4.8%	23.8%	15.9%	4.8%	3.2%	52.4%
	contractor	Frequency	2	4	6	0	2	14
		Percentage	3.2%	6.3%	9.5%	0.0%	3.2%	22.2%
	consultant	Frequency	0	8	6	0	2	16
		Percentage	0.0%	12.7%	9.5%	0.0%	3.2%	25.4%
Total		Frequency	5	27	22	3	6	63
		Percentage	7.9%	42.9%	34.9%	4.8%	9.5%	100.0%

Source :(Survey Analysis, July, 2021)

B. Effect of Least bid on contractor profit

Table 17 Respondent's attitude on impact of least bid on contractor's profit

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	
Stakeholder	Client	Frequency	5	13	7	5	3	33
		Percentage	7.9%	20.6%	11.1%	7.9%	4.8%	52.4%
	contractor	Frequency	0	3	8	0	3	14
		Percentage	0.0%	4.8%	12.7%	0.0%	4.8%	22.2%
	consultant	Frequency	3	10	0	1	2	16
		Percentage	4.8%	15.9%	0.0%	1.6%	3.2%	25.4%
Total		Frequency	8	26	15	6	8	63
		Percentage	12.7%	41.3%	23.8%	9.5%	12.7%	100.0%

Source :(Survey Analysis, July, 2021)

C. Role of Least bid for dispute/claim not to occur

Table 18 Respondent's attitude on impact of least bid on dispute/claim

			will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	7	14	4	5	3	33
		Percentage	11.1%	22.2%	6.3%	7.9%	4.8%	52.4%
	contractor	Frequency	6	4	4	0	0	14
		Percentage	9.5%	6.3%	6.3%	0.0%	0.0%	22.2%
	consultant	Frequency	4	9	0	3	0	16
		Percentage	6.3%	14.3%	0.0%	4.8%	0.0%	25.4%
Total		Frequency	17	27	8	8	3	63
		Percentage	27.0%	42.9%	12.7%	12.7%	4.8%	100.0%

Source :(Survey Analysis, July, 2021)

D. Effect of Least bid on project quality control

Table 19 Respondent's attitude on impact of least bid on quality control

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	
Stakeholder	Client	Frequency	3	15	10	3	2	33
		Percentage	4.8%	23.8%	15.9%	4.8%	3.2%	52.4%
	contractor	Frequency	0	6	6	2	0	14
		Percentage	0.0%	9.5%	9.5%	3.2%	0.0%	22.2%
	consultant	Frequency	0	10	6	0	0	16
		Percentage	0.0%	15.9%	9.5%	0.0%	0.0%	25.4%
Total		Frequency	3	31	22	5	2	63
		Percentage	4.8%	49.2%	34.9%	7.9%	3.2%	100.0%

Source :(Survey Analysis, July, 2021)

E. Effect of Least bid on project duration

Table 20 Respondent's attitude on impact of least bid on project schedule

			will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	
Stakeholder	Client	Frequency	16	8	6	3	33
		Percentage	25.4%	12.7%	9.5%	4.8%	52.4%
	contractor	Frequency	7	5	2	0	14
		Percentage	11.1%	7.9%	3.2%	0.0%	22.2%
	consultant	Frequency	5	6	5	0	16
		Percentage	7.9%	9.5%	7.9%	0.0%	25.4%
Total		Frequency	28	19	13	3	63
		Percentage	44.4%	30.2%	20.6%	4.8%	100.0%

Source :(Survey Analysis, July, 2021)

ii. Competitive average bid evaluation and contract award method

According to the study**,** 41.3% of total respondents respond that the system of bid evaluation has sometimes positive role for gov't budget. Not only this but also 15.9% of total respondents agree with the idea that the competitive bid evaluation method have always a positive effect on gov't budget. Majority of respondents 18(55%) from client side out of 33 respond it is positive for government budget if the competitive average bid evaluation technique is going to be adopted. 6 respondents said the evaluation method has no effect on

gov't budget whereas the other 2 has no opinion on the issue. Only 3 respondents (9%) strongly argue that the competitive average bid evaluation method always negatively affects gov't budget.

Respondents from contractor side also responds that the evaluation method sometimes have a positive impact on gov't budget around 42.85%,again 4 out of the 14 around 29% argue the system always play a positive role for owner cost. When we refer, the consultant side participants 25% of them suggest they have no opinion on the issue where as 38 % respond the method sometimes play positive role for gov't budget. Participants from the three stakeholders respond competitive average bid evaluation method have sometimes positive role on contractor profit 45.45%, 42.85 and 50% for client, contractor and consultant respectively.

According to the study, the respondents from the case study firm 25% or 8 out of the 33 in frequency strongly argues the bid evaluation method have always a positive effect for project schedule; again around 40% responds the method sometimes have positive role in contract period of a project. Almost all respondents from consultant side responds competitive average bid evaluation have a positive effect on duration of a project. Summary of respondent's attitude on role of competitive average bid evaluation method on features described are discussed in tabular form as follows:-

A. Effect of competitive average bid evaluation on government budget

Table 21 Respondent's attitude on impact of competitive average on gov't budget

			No Opinion	will always have a negative effect	may sometime have negative effect	will have no effect	may sometime have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	2	3	4	6	12	6	33
		Percentage	3.2%	4.8%	6.3%	9.5%	19.0%	9.5%	52.4%
	contractor	Frequency	2	0	0	2	6	4	14
		Percentage	3.2%	0.0%	0.0%	3.2%	9.5%	6.3%	22.2%
	consultant	Frequency	4	0	2	2	8	0	16
		Percentage	6.3%	0.0%	3.2%	3.2%	12.7%	0.0%	25.4%
Total		Frequency	8	3	6	10	26	10	63
		Percentage	12.7%	4.8%	9.5%	15.9%	41.3%	15.9%	100.0%

Source :(Survey Analysis, July, 2021)

B. Effect of competitive average bid evaluation on contractor profit

Table 22 Respondent's attitude on impact of competitive average on contractor profit

			No Opinion	will always have a negative effect	may sometime have negative effect	will have no effect	may sometime have positive effect	will always have positive effect	Total
Stakeholder	Client	Count	3	2	4	6	11	7	33
		% of Total	4.8%	3.2%	6.3%	9.5%	17.5%	11.1%	52.4%
	contractor	Count	0	0	2	0	10	2	14
		% of Total	0.0%	0.0%	3.2%	0.0%	15.9%	3.2%	22.2%
	consultant	Count	4	0	0	6	6	0	16
		% of Total	6.3%	0.0%	0.0%	9.5%	9.5%	0.0%	25.4%
Total		Count	7	2	6	12	27	9	63
		% of Total	11.1%	3.2%	9.5%	19.0%	42.9%	14.3%	100.0%

Source :(Survey Analysis, July, 2021)

C. Role of competitive average bid evaluation dispute/claim not to occur

Table 23 Respondent's attitude on impact of competitive average on contractor profit

			No Opinion	will always have a negative effect	may sometime have negative effect	will have no effect	may sometime have positive effect	will always have positive effect	
Stakeholder	Client	Count	0	2	3	8	15	5	33
		% of Total	0.0%	3.2%	4.8%	12.7%	23.8%	7.9%	52.4%
	contractor	Count	2	0	0	4	6	2	14
		% of Total	3.2%	0.0%	0.0%	6.3%	9.5%	3.2%	22.2%
	consultant	Count	2	0	0	2	8	4	16
		% of Total	3.2%	0.0%	0.0%	3.2%	12.7%	6.3%	25.4%
Total		Count	4	2	3	14	29	11	63
		% of Total	6.3%	3.2%	4.8%	22.2%	46.0%	17.5%	100.0%

Source :(Survey Analysis, July, 2021)

D. Effect of competitive average bid evaluation on Quality control

Table 24 Respondent's attitude on impact of competitive average on quality control

			No Opinion	may sometime have negative effect	will have no effect	may sometime have positive effect	will always have positive effect	Total
Stakeholder	Client	Count	3	2	8	15	5	33
		% of Total	4.8%	3.2%	12.7%	23.8%	7.9%	52.4%
	contractor	Count	4	0	2	8	0	14
		% of Total	6.3%	0.0%	3.2%	12.7%	0.0%	22.2%
	consultant	Count	0	0	0	9	7	16
		% of Total	0.0%	0.0%	0.0%	14.3%	11.1%	25.4%
Total		Count	7	2	10	32	12	63
		% of Total	11.1%	3.2%	15.9%	50.8%	19.0%	100.0%

Source :(Survey Analysis, July, 2021)

E. Effect of competitive average bid evaluation on project duration

Table 25 Respondent's attitude on impact of competitive average on project duration

			No Opinion	may sometime have negative effect	will have no effect	may sometime have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	3	3	6	14	7	33
		Precentage	4.8%	4.8%	9.5%	22.2%	11.1%	52.4%
	contractor	Frequency	0	4	2	6	2	14
		Precentage	0.0%	6.3%	3.2%	9.5%	3.2%	22.2%
	consultant	Frequency	0	0	0	10	6	16
		Precentage	0.0%	0.0%	0.0%	15.9%	9.5%	25.4%
Total		Frequency	3	7	8	30	15	63
		Precentage	4.8%	11.1%	12.7%	47.6%	23.8%	100.0%

Source :(Survey Analysis, July, 2021)

iii. Effect of the Engineer's estimate bid evaluation and contract award method

Majority of respondents from Addis Ababa city construction bureau said that, the engineering estimation method of evaluating a bid have a positive role for gov't budget, contractors profit, project duration, and quality control of a project. Participants from the contractors side 100% respond the method have a significant positive role in respect to

contractor's profit. Above 38% of consultant side representatives said they have no clue on the issue of engineers estimate effect on contractor's profit.

The respondents from the bureau, contractors and consultants 36.36%, 57.14% and 37.5% respectively respond the bid evaluation method sometimes have positive effect on schedule of a project. 13 in number or 40% of the bureau respondents said the engineers estimate bid evaluation sometimes play positive role on quality of a project. On the other hand, 42.85% from contractors and 38% from consultants respond the method have sometimes a positive effect on quality of a project. 7 participants from the bureau and 2 from contractors argue the evaluation system always have a positive effect on quality of a project. The direct stakeholder professionals of Addis Ababa city construction bureau believes that the engineer estimate bid evaluation system may sometimes have a positive role for eliminating claim to happen. The findings are broadly discussed as follows:-

A. Effect of Engineer's estimate bid evaluation on government budget

Table 26 Respondent's attitude on impact of engineers estimate bid evaluation on government budget

			No Opinion	will always have a negative effect	may sometime have negative effect	will have no effect	may sometime have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	0	3	7	8	11	4	33
		Percent	0.0%	4.8%	11.1%	12.7%	17.5%	6.3%	52.4%
	contractor	Frequency	0	0	2	4	6	2	14
		Percent	0.0%	0.0%	3.2%	6.3%	9.5%	3.2%	22.2%
	consultant	Frequency	1	0	4	0	9	2	16
		Percent	1.6%	0.0%	6.3%	0.0%	14.3%	3.2%	25.4%
Total		Frequency	1	3	13	12	26	8	63
		Percent	1.6%	4.8%	20.6%	19.0%	41.3%	12.7%	100.0%

Source :(Survey Analysis, July, 2021)

B. Effect of Engineer's estimate bid evaluation on contractor's profit

Table 27 Respondent's attitude on impact of engineer estimate on contractor's profit

			No Opinion	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	4	0	4	15	10	33
		Percentage	6.3%	0.0%	6.3%	23.8%	15.9%	52.4%
	contractor	Frequency	0	0	0	10	4	14
		Percentage	0.0%	0.0%	0.0%	15.9%	6.3%	22.2%
	consultant	Frequency	6	2	4	4	0	16
		Percentage	9.5%	3.2%	6.3%	6.3%	0.0%	25.4%
Total		Frequency	10	2	8	29	14	63
		Percentage	15.9%	3.2%	12.7%	46.0%	22.2%	100.0%

Source :(Survey Analysis, July, 2021)

C. Role of engineer's estimate bid evaluation dispute/claim not to happen

Table 28 respondent's attitude on impact of engineer estimate bid evaluation on dispute/claim

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	
Stakeholder	Client	Frequency	2	0	14	6	6	5	33
		Percentage	3.2%	0.0%	22.2%	9.5%	9.5%	7.9%	52.4%
	contractor	Frequency	2	2	6	2	2	0	14
		Percentage	3.2%	3.2%	9.5%	3.2%	3.2%	0.0%	22.2%
	consultant	Frequency	1	0	3	4	8	0	16
		Percentage	1.6%	0.0%	4.8%	6.3%	12.7%	0.0%	25.4%
Total		Frequency	5	2	23	12	16	5	63
		Percentage	7.9%	3.2%	36.5%	19.0%	25.4%	7.9%	100.0%

Source :(Survey Analysis, July, 2021)

D. Effect of Engineer's estimate bid evaluation on quality control

Table 29 Respondent's attitude on impact of engineers estimate bid evaluation on quality control

			No Opinion	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	2	4	7	13	7	33
		Percentage	3.2%	6.3%	11.1%	20.6%	11.1%	52.4%
	contractor	Frequency	2	2	2	6	2	14
		Percentage	3.2%	3.2%	3.2%	9.5%	3.2%	22.2%
	consultant	Frequency	4	2	4	6	0	16
		Percentage	6.3%	3.2%	6.3%	9.5%	0.0%	25.4%
Total		Frequency	8	8	13	25	9	63
		Percentage	12.7%	12.7%	20.6%	39.7%	14.3%	100.0%

Source :(Survey Analysis, July, 2021)

E. Effect of Engineer's estimate bid evaluation on project duration

Table 30 Respondent's attitude on impact of engineers estimate bid evaluation on project duration

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	2	2	5	8	12	4	33
		Percentage	3.2%	3.2%	7.9%	12.7%	19.0%	6.3%	52.4%
	contractor	Frequency	0	0	0	2	8	4	14
		Percentage	0.0%	0.0%	0.0%	3.2%	12.7%	6.3%	22.2%
	consultant	Frequency	0	0	2	6	6	2	16
		Percentage	0.0%	0.0%	3.2%	9.5%	9.5%	3.2%	25.4%
Total		Frequency	2	2	7	16	26	10	63
		Percentage	3.2%	3.2%	11.1%	25.4%	41.3%	15.9%	100.0%

IV. Effect of Fixed price/Direct cost contract delivery method (ቁርጥ ዋጋ)

According to the study, majority of participants around 31.7% responds that the system of project delivery may sometimes play a negative role on gov't budget. However, around 20.6% of respondents believe that the system of project delivery may sometimes play a positive role on public money. In addition, 41.3% and 38.1% of total participants respond

the system of contract delivery may sometimes play a positive role and will always have a positive effect on contractors profit respectively.

Majority of respondents 36.5% responds that the fixed price contract delivery method may sometimes play a positive role dispute not to occur throughout the construction process.39.7% of study respondents or 25 out of 63 responds that the project delivery system may sometimes have a positive role on quality control system. Considering effect of fixed price contract delivery method on duration of projects, the study found out above 50% of respondents said that the system may sometimes has a positive effect on duration of projects. The discussions are briefly stated in tabular form as follows:-

A. Effect of Fixed price project contract delivery on government budget

Table 31 Respondent's attitude on impact of fixed price project contract delivery on gov't budget

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	4	5	12	0	7	5	33
		Percentage	6.3%	7.9%	19.0%	0.0%	11.1%	7.9%	52.4%
	contractor	Frequency	5	2	4	3	0	0	14
		Percentage	7.9%	3.2%	6.3%	4.8%	0.0%	0.0%	22.2%
	consultant	Frequency	2	0	4	2	6	2	16
		Percentage	3.2%	0.0%	6.3%	3.2%	9.5%	3.2%	25.4%
Total		Frequency	11	7	20	5	13	7	63
		Percentage	17.5%	11.1%	31.7%	7.9%	20.6%	11.1%	100.0%

Source :(Survey Analysis, July, 2021)

B. Effect of Fixed price project contract delivery on contractor profit

Table 32 Respondent's attitude on impact of fixed price project contract delivery on contractor profit

			No Opinion	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	6	3	14	10	33
		Percentage	9.5%	4.8%	22.2%	15.9%	52.4%
	contractor	Frequency	0	0	0	14	14
		Percentage	0.0%	0.0%	0.0%	22.2%	22.2%
	consultant	Frequency	4	0	12	0	16
		Percentage	6.3%	0.0%	19.0%	0.0%	25.4%
Total		Frequency	10	3	26	24	63
		Percentage	15.9%	4.8%	41.3%	38.1%	100.0%

Source :(Survey Analysis, July, 2021)

C. Role of Fixed price project contract delivery dispute/claim not to occur

Table 33 respondent's attitude on impact of fixed price project contract delivery on dispute/claim

			No Opinion	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	2	5	9	9	8	33
		Percentage	3.2%	7.9%	14.3%	14.3%	12.7%	52.4%
	contractor	Frequency	0	2	2	8	2	14
		Percentage	0.0%	3.2%	3.2%	12.7%	3.2%	22.2%
	consultant	Frequency	2	4	2	6	2	16
		Percentage	3.2%	6.3%	3.2%	9.5%	3.2%	25.4%
Total		Frequency	4	11	13	23	12	63
		Percentage	6.3%	17.5%	20.6%	36.5%	19.0%	100.0%

Source :(Survey Analysis, July, 2021)

D. Effect of Fixed price project contract delivery on quality control

Table 34 Respondent's attitude on impact of fixed price project contract delivery on quality control

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	0	2	7	0	13	11	33
		Percentage	0.0%	3.2%	11.1%	0.0%	20.6%	17.5%	52.4%
	contractor	Frequency	2	0	0	2	6	4	14
		Percentage	3.2%	0.0%	0.0%	3.2%	9.5%	6.3%	22.2%
	consultant	Frequency	0	2	0	2	6	6	16
		Percentage	0.0%	3.2%	0.0%	3.2%	9.5%	9.5%	25.4%
Total		Frequency	2	4	7	4	25	21	63
		Percentage	3.2%	6.3%	11.1%	6.3%	39.7%	33.3%	100.0%

Source :(Survey Analysis, June, 2021)

E. Effect of Fixed price project contract delivery on project duration

Table 35 Respondent's attitude on impact of fixed price project contract delivery on project duration)

			No Opinion	may sometime have negative effect	will have no effect	may sometime have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	3	2	3	14	11	33
		Percentage	4.8%	3.2%	4.8%	22.2%	17.5%	52.4%
	contractor	Frequency	0	2	6	4	2	14
		Percentage	0.0%	3.2%	9.5%	6.3%	3.2%	22.2%
	consultant	Frequency	0	0	2	14	0	16
		Percentage	0.0%	0.0%	3.2%	22.2%	0.0%	25.4%
Total		Frequency	3	4	11	32	13	63
		Percentage	4.8%	6.3%	17.5%	50.8%	20.6%	100.0%

Source :(Survey Analysis, July, 2021

V. Effect of Restricted bid evaluation and contract delivery method

As discussed on Appendices 2 briefly, this method is Competitive but for shortlisted contractors by the client say 6 bidders. There is threshold as per PPA/AA based on procurement type usually contract amount >15 million in construction (PPA, 2009). May be applied when open procurement fails above 2 times as well as project is urgent but not

sensitive The professional respondents selected from Addis Ababa city construction bureau both at main office and sub city level bureaus, contractors and consultants engaged in projects of the bureau are also asked to give their ratings on constraints listed under restricted bid evaluation and contract award methods. Accordingly, the study found out that majority of respondents 38% from consultant side responds that the method brings negative effect to cost of a project. Unlike the consultant side respondents, the client and contractor side participants show their attitude towards the issue is somewhat in between both negative and positive.

The study also found out, 13 in number or around 39.39% from case study firm respondents, 57.14% from contractor side participants and 37.5% from the consultant side argues that the restricted bid evaluation method has sometimes a positive impact on project finishing time. When we see the ratings under quality control of a project 30% of respondents from client side and half of respondents from consultant side confirms it is positive for the quality of the project if project is awarded using restricted bid evaluation method. But 43% of participants from contractor side responds that the method does not have either positive or negative effect on quality of a project. The summary of the overall findings is briefly illustrated in tabular form as follows:-

A. Effect of Restricted bid evaluation on public budget

Table 36 Respondents attitude on impact of Restricted bid evaluation on public budget

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	3	3	8	8	8	3	33
		Percentage	4.8%	4.8%	12.7%	12.7%	12.7%	4.8%	52.4%
	contractor	Frequency	4	0	4	2	4	0	14
		Percentage	6.3%	0.0%	6.3%	3.2%	6.3%	0.0%	22.2%
	consultant	Frequency	4	0	6	2	4	0	16
		Percentage	6.3%	0.0%	9.5%	3.2%	6.3%	0.0%	25.4%
Total		Frequency	11	3	18	12	16	3	63
		Percentage	17.5%	4.8%	28.6%	19.0%	25.4%	4.8%	100.0%

Source :(Survey Analysis, July, 2021)

B. Effect of Restricted bid evaluation on contractor profit

Table 37 Respondents attitude on impact of Restricted bid evaluation on contractor profit

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	6	4	6	7	6	4	33
		Percentage	9.5%	6.3%	9.5%	11.1%	9.5%	6.3%	52.4%
	contractor	Frequency	0	0	0	4	10	0	14
		Percentage	0.0%	0.0%	0.0%	6.3%	15.9%	0.0%	22.2%
	consultant	Frequency	6	0	4	4	2	0	16
		Percentage	9.5%	0.0%	6.3%	6.3%	3.2%	0.0%	25.4%
Total		Frequency	12	4	10	15	18	4	63
		Percentage	19.0%	6.3%	15.9%	23.8%	28.6%	6.3%	100.0%

Source :(Survey Analysis, July, 2021)

C. Role of Restricted bid evaluation disputes /claim not to occur

Table 38 Respondents attitude on impact of Restricted bid evaluation on disputes /claim

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	4	4	8	8	7	2	33
		Percentage	6.3%	6.3%	12.7%	12.7%	11.1%	3.2%	52.4%
	contractor	Frequency	2	0	4	2	6	0	14
		Percentage	3.2%	0.0%	6.3%	3.2%	9.5%	0.0%	22.2%
	consultant	Frequency	0	0	4	3	7	2	16
		Percentage	0.0%	0.0%	6.3%	4.8%	11.1%	3.2%	25.4%
Total		Frequency	6	4	16	13	20	4	63
		Percentage	9.5%	6.3%	25.4%	20.6%	31.7%	6.3%	100.0%

Source :(Own Survey Analysis, July, 2021)

D. Effect of Restricted bid evaluation on quality control

Table 39 Respondents attitude on impact of Restricted bid evaluation on quality control

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	4	1	6	6	10	6	33
		Percentage	6.3%	1.6%	9.5%	9.5%	15.9%	9.5%	52.4%
	contractor	Frequency	5	0	0	5	4	0	14
		Percentage	7.9%	0.0%	0.0%	7.9%	6.3%	0.0%	22.2%
	consultant	Frequency	0	0	6	2	8	0	16
		Percentage	0.0%	0.0%	9.5%	3.2%	12.7%	0.0%	25.4%
Total		Frequency	9	1	12	13	22	6	63
		Percentage	14.3%	1.6%	19.0%	20.6%	34.9%	9.5%	100.0%

Source :(Own Survey Analysis, July, 2021)

E. Effect of Restricted bid evaluation on project duration

Table 40 Respondents attitude on impact of Restricted bid evaluation on project duration

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	3	2	8	4	11	5	33
		Percentage	4.8%	3.2%	12.7%	6.3%	17.5%	7.9%	52.4%
	contractor	Frequency	0	0	2	4	8	0	14
		Percentage	0.0%	0.0%	3.2%	6.3%	12.7%	0.0%	22.2%
	consultant	Frequency	0	0	4	4	6	2	16
		Percentage	0.0%	0.0%	6.3%	6.3%	9.5%	3.2%	25.4%
Total		Frequency	3	2	14	12	25	7	63
		Percentage	4.8%	3.2%	22.2%	19.0%	39.7%	11.1%	100.0%

Source :(Own Survey Analysis, July, 2021)

VI. Effect of Subjective rating bid evaluation and contract delivery method

In this system, Factors such as references from previous jobs, financial performance, bonding capacity, technical competence are subjectively rated and combined with the bid price to develop a scoring system. Bid is awarded to the highest. On the contrary, the findings and discussions of the study are presented in detail below.

According to the survey, subjective rating bid evaluation method has a positive effect on cost of a project. Because largest number of respondents from the three stakeholder's client 33.33%, contractor 29% and consultant 37.5% responds the method sometimes plays a

positive role on gov't budget.in these case around 24% from client and 29% from contractor argues that the method always have a positive impact on project budget.

The study also found out that, 16 in number or 48 % of respondents from case study firm, above %57% from contractors and 50 % from consultant side responds that the described bid evaluation procedure have sometimes positive impact on duration of a project.in addition, around 19% of respondents from case study firm replied that the system of bid evaluation described above always play a positive role in duration of a project.

The results of the survey in respect to what the quality of a project looks like if delivered by subjective rating bid evaluation and contract delivery method were also incorporated.8 respondents from the consultant side ,15 from client and 4 from contractor side responds that the method sometimes have a positive effect on quality of a project. 6 (19%) from Addis Ababa city construction bureau professional respondents selected from both main and sub city level bureaus responds that the type of bid evaluation will always positively affect quality of projects.

Participants from the case study bureau around 27% responds that, subjective rating bid evaluation procedure have sometimes negative impact on profit of the contractor whereas majority of respondents from stake holders responds the method plays sometimes positive role for a contractor to earn profit. The discussions are presented below:-

A. Effect of Subjective rating bid evaluation on public budget

Table 41 Respondent's attitude on impact of Subjective rating bid evaluation on public budget

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	2	3	4	5	11	8	33
		Percentage	3.2%	4.8%	6.3%	7.9%	17.5%	12.7%	52.4%
	contractor	Frequency	2	0	2	2	4	4	14
		Percentage	3.2%	0.0%	3.2%	3.2%	6.3%	6.3%	22.2%
	consultant	Frequency	4	0	4	2	6	0	16
		Percentage	6.3%	0.0%	6.3%	3.2%	9.5%	0.0%	25.4%
Total		Frequency	8	3	10	9	21	12	63
		Percentage	12.7%	4.8%	15.9%	14.3%	33.3%	19.0%	100.0%

Source :(Survey Analysis, July, 2021)

B. Effect of Subjective rating bid evaluation on contractor's profit

Table 42 Respondent's attitude about impact of Subjective rating bid evaluation on contractor's profit.

			No Opinion	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	8	9	6	9	1	33
		Percentage	12.7%	14.3%	9.5%	14.3%	1.6%	52.4%
	contractor	Frequency	0	6	0	8	0	14
		Percentage	0.0%	9.5%	0.0%	12.7%	0.0%	22.2%
	consultant	Frequency	4	2	4	6	0	16
		Percentage	6.3%	3.2%	6.3%	9.5%	0.0%	25.4%
Total		Frequency	12	17	10	23	1	63
		Percentage	19.0%	27.0%	15.9%	36.5%	1.6%	100.0%

Source :(Survey Analysis, July, 2021)

C. Role of Subjective rating bid evaluation on dispute/claim not to occur

Table 43 Respondent's attitude on impact of Subjective rating bid evaluation on Dispute

			No Opinion	will always have a negative effect	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	
Stakeholder	Client	Frequency	3	2	0	6	19	3	33
		Percentage	4.8%	3.2%	0.0%	9.5%	30.2%	4.8%	52.4%
	contractor	Frequency	2	0	2	6	4	0	14
		Percentage	3.2%	0.0%	3.2%	9.5%	6.3%	0.0%	22.2%
	consultant	Frequency	0	0	4	2	8	2	16
		Percentage	0.0%	0.0%	6.3%	3.2%	12.7%	3.2%	25.4%
Total		Frequency	5	2	6	14	31	5	63
		Percentage	7.9%	3.2%	9.5%	22.2%	49.2%	7.9%	100.0%

Source :(Survey Analysis, June, 2021)

D. Effect of Subjective rating bid evaluation on Quality control

Table 44 Respondent's attitude on impact of Subjective rating bid evaluation on Quality Control

			No Opinion	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	5	5	2	15	6	33
		Percentage	7.9%	7.9%	3.2%	23.8%	9.5%	52.4%
	contractor	Frequency	4	2	4	4	0	14
		Percentage	6.3%	3.2%	6.3%	6.3%	0.0%	22.2%
	consultant	Frequency	0	4	4	8	0	16
		Percentage	0.0%	6.3%	6.3%	12.7%	0.0%	25.4%
Total		Frequency	9	11	10	27	6	63
		Percentage	14.3%	17.5%	15.9%	42.9%	9.5%	100.0%

Source :(Survey Analysis, July, 2021)

E. Effect of Subjective rating bid evaluation on project duration

Table 45Respondent's attitude on impact of Subjective rating bid evaluation on project duration

			No Opinion	may sometimes have negative effect	will have no effect	may sometimes have positive effect	will always have positive effect	Total
Stakeholder	Client	Frequency	1	4	6	16	6	33
		Percentage	1.6%	6.3%	9.5%	25.4%	9.5%	52.4%
	contractor	Frequency	0	0	4	8	2	14
		Percentage	0.0%	0.0%	6.3%	12.7%	3.2%	22.2%
	consultant	Frequency	0	2	6	8	0	16
		Percentage	0.0%	3.2%	9.5%	12.7%	0.0%	25.4%
Total		Frequency	1	6	16	32	8	63
		Percentage	1.6%	9.5%	25.4%	50.8%	12.7%	100.0%

Source :(Survey Analysis, July, 2021)

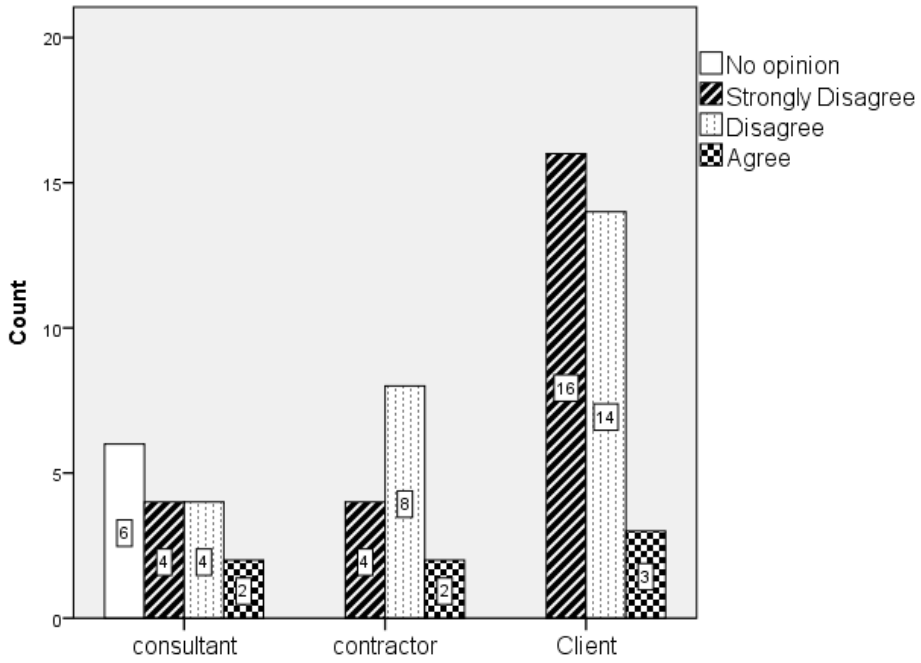
4.3.2.6 Respondent's attitude on Stated Effects and Alternative Bidding Methods

In this particular survey question respondents were asked to forward their professional attitude in the stated bid evaluation and contract award method. Findings are discussed below.

A. Competitive low bidding system has worked well previously again well works in the future .no need to change.

The summary of respondent's on the idea(Competitive low bidding system has worked well previously again well works in the future .no need to change) is presented on the figure below:-

Figure 5 Responses given on varies bid evaluation related ideas



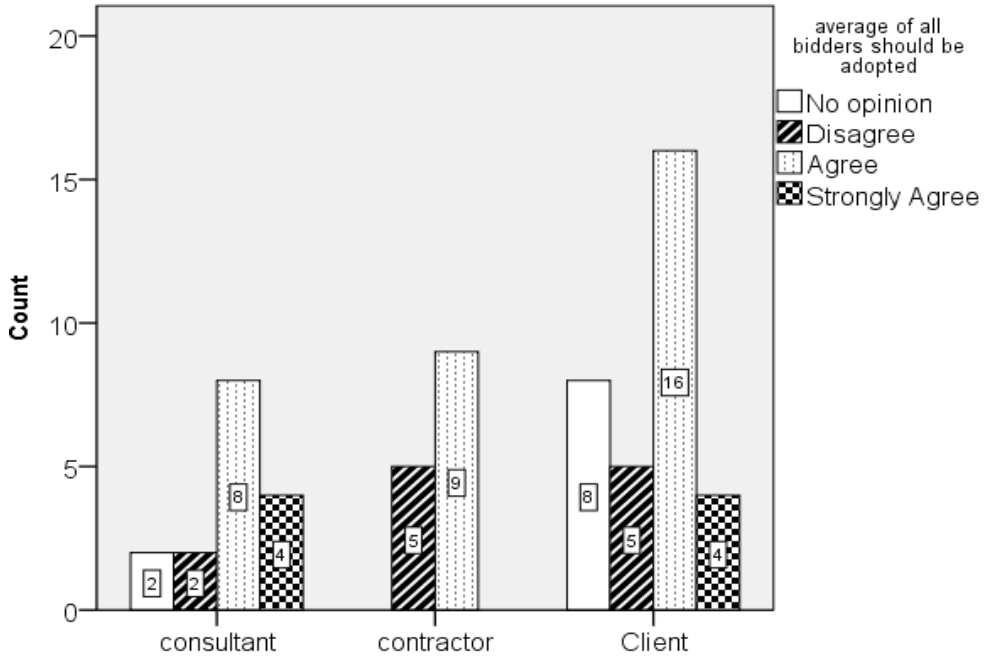
Source (Survey Analysis, June, 2021)

The study found out only 6% of respondents has no opinion whether the competitive low bidding system continues or not. On the other hand, 48.5% participants from Addis Ababa construction bureau strongly disagree in the bid evaluation method and they do not favor the idea if the method is practiced on the future.57.1% from contractor side respond they disagree in applying least bid evaluation method and 25% of consultant respondents strongly disagree in adopting the least bid method of financial bid evaluation. Only 11.1% from total respondents said they agree if the method is going to be adopted in the future.

B. Competitive system with provision to award contracts to bidders closest to the average of all bidders should be adopted.

According to the survey, respondents favor the idea to award a construction bid to bidder whose offer is nearest to average value of financial responsive bidders. That is why 64.3% respondents from contractor, 48.5% from client and 50% from consultant indicate that they agree with the practice. Only 19% from all respondents disagree in adopting the practice but none of them strongly disagree if the system is practiced in future. Figure 6 summarizes the analysis as shown below:-

Figure 6 Respondent's attitude to average bid evaluation.

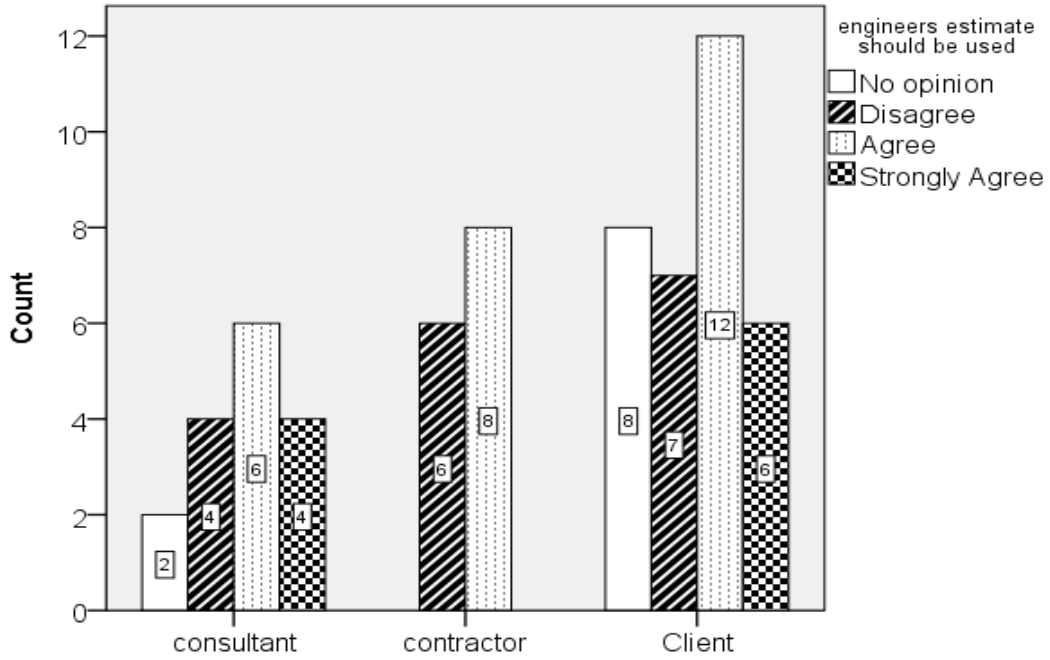


Source (Survey Analysis, June, 2021)

C. Competitive system with provision to award contracts to lowest bidder which is within some predefined range (± 20%) of the engineers estimate should be adopted.

Addis Ababa city construction bureau professional respondents from both main office and sub city levels agree if the engineers estimate financial bid evaluation method is adopted. Around 36% from those 33 respondents agree and 18.2% of them are strongly comfortable in applying the method. Not only client side participants but also 57.1% out of the 14 contractor side respondents and 37.5% from consultant side respondents prefer if the bid evaluation described is going to be practiced. Around 27% from the overall respondents disagree in implementing the engineers estimate bid evaluation methods. Survey outputs are summarized in the figure below:-

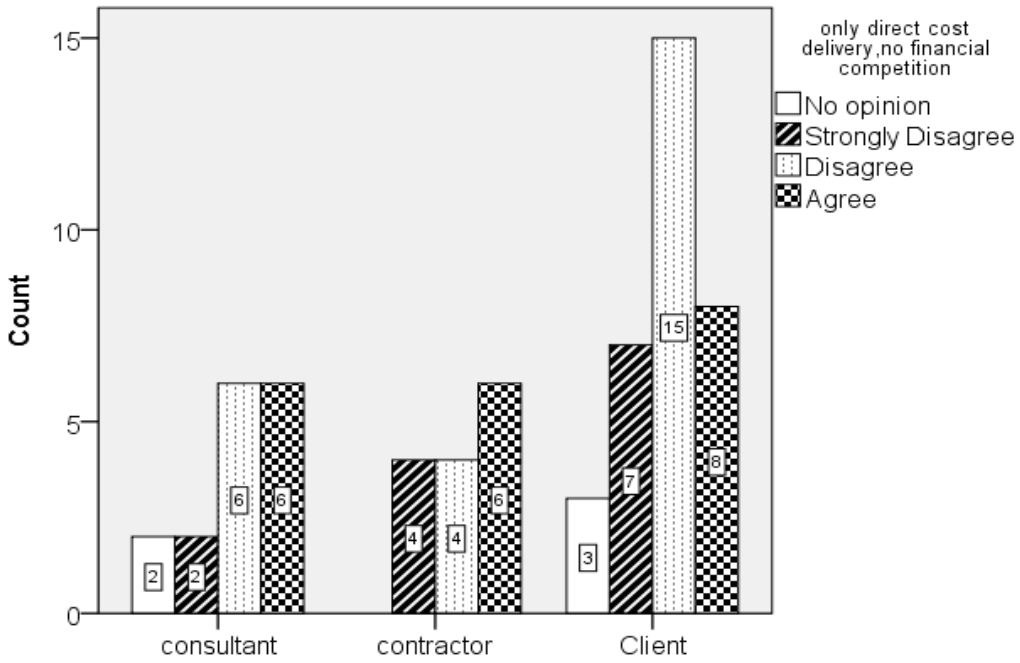
Figure 7 Respondent's attitude to engineers estimate evaluation



Source (Survey Analysis, June, 2021)

D. Only fixed price on engineers estimated unit rate project delivery should be used. Totally no financial competition (ቁርጥ ዋጋ)

Figure 8 Participant's attitude to fixed price project delivery method

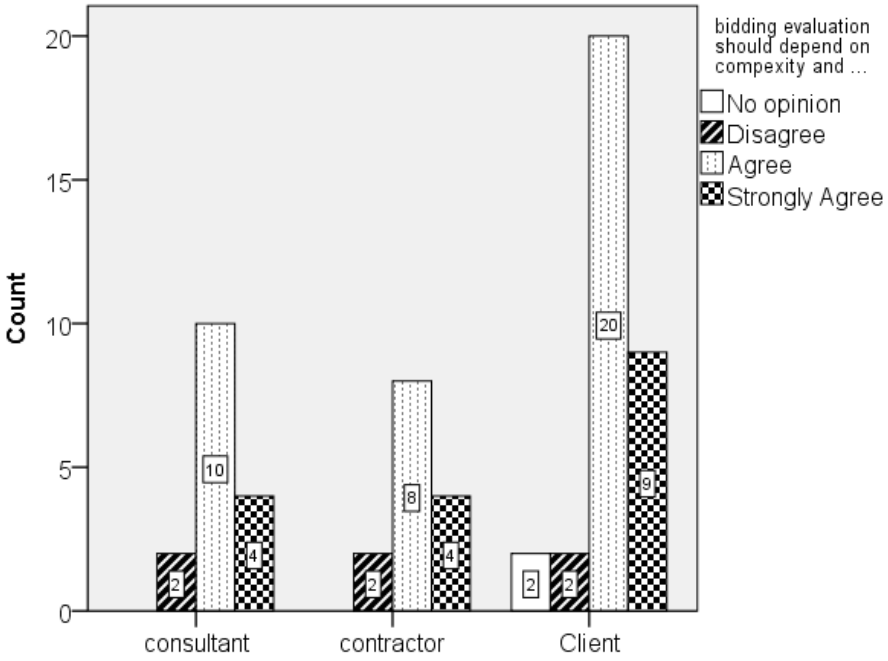


Source (Survey Analysis, June, 2021)

As shown on figure 8 above, the alternative proposed to award contracts without financial competition just only by engineer's estimate is not accepted by case study firm respondents and consultant side respondents. However contractor side respondents prefer the adoption of delivering contracts by the engineer's unit rate. 45.5% of participants from client side and 37.5% from consultant's respondents disagree whereas 42.9% out of the 14 contractor side respondents agree if the method is going to be practiced.

E. Bidding procedure should be depend upon type and complexity of projects

Figure 9 Participant's attitude on bidding procedure according to type and complexity of projects.



Source (Survey Analysis, June, 2021)

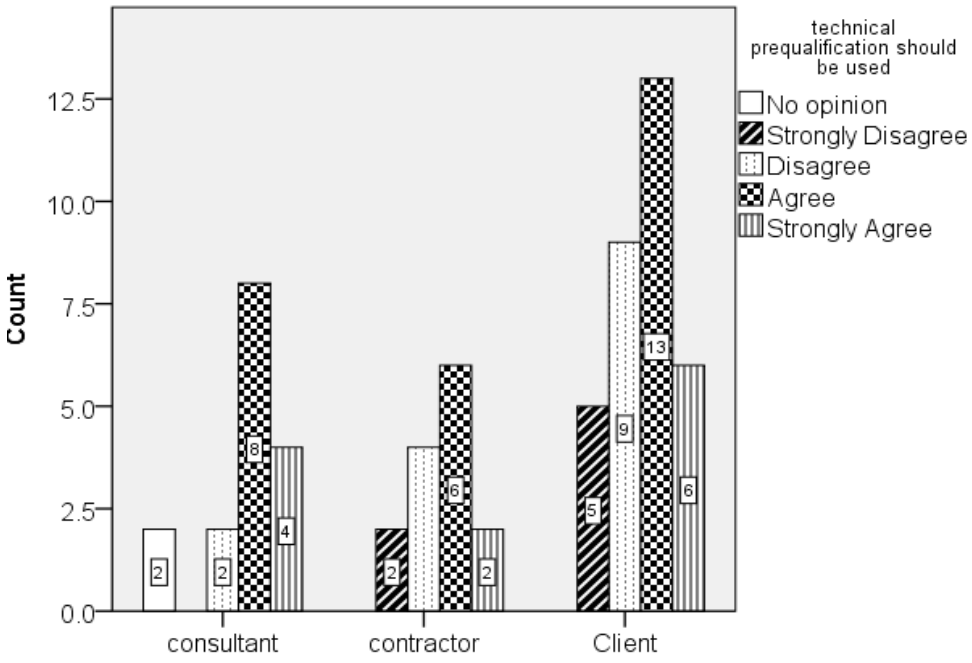
According to the output of the survey summarized in the above figure, the concept of deciding the bid evaluation method should have to be based on the type and complexity of projects is universally accepted by respondents of this research. Accordingly, 60.6% of case study bureau respondents, 57.1% from contractors and 62.5% from consultant side respondents agree if the practice of applying different type of bid evaluation in relative to type and complexity of projects is implemented.

Only 9.5% of the total respondents disagree in the proposed bid evaluation practice and none of respondents strongly disagree if the system is going to be implemented.

F. Aggregate value of technical qualification and price should be used

The study found out that, 39.4% from client, 42.9% from contractor side respondents and 50% from consultant side respondents agree the adoption of bid evaluation and awarding a project by comparing the aggregate result of contractor's technical and financial scores. On the other hand, the survey analysis shows that 28.6% of respondents from contractor, 27.3% from Addis Ababa construction bureau and 12.5% from consultant side respondents disagree with the alternatives. The survey result is elaborated in the figure below:-

Figure 10 Respondent's opinion on bid evaluation based on aggregate value of technic and finance



Source (Survey Analysis, June, 2021)

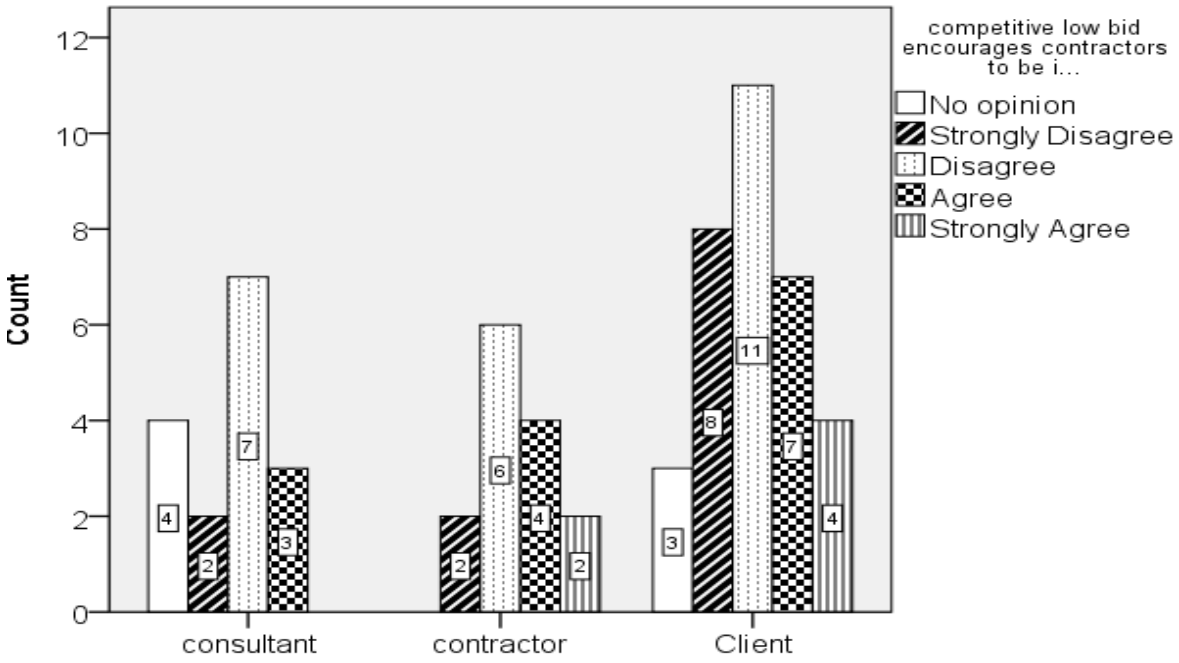
As discussed in Appendix part, type refers to Buildings, utilities, industrial, Electro-mechanical and the like were as complexity is in terms of project structure, technical, temporal and directional complexity. Unlike the traditional bidding procedure, many of respondents 40.6% choose if contract is to be awarded for the bidder who score larger amount when both technical and financial evaluations are summed up. These method is not acceptable by 18 respondents incorporated on the survey.11% of respondents strongly vote for the bidding practice and 6.3% respondents have no opinion whether the method is practiced or not.

The study also found out 5 in number or 7.8% of respondents strongly disagrees if aggregate value of technical qualification and price should be used as evaluation method to award construction contracts.

G. Traditional bidding procedure (competitive low bid) encourages contractors to be innovative

The assumption that the least price bid evaluation shapes contractors to be innovative is universally rejected by respondents of these survey. About 33.3% out of 33 responsive professionals of the Addis Ababa city construction bureau, 42.9% from contractors and 43.8% of consultant participants disagree with the assumptions. Again, 42.2%, 28.6% and 12.5% from client, contractor and consultant respectively responds that they strongly oppose with the idea that least price bid evaluation encourages contractors to be innovative. On the other hand, only 9.5% respondents from all 63 strongly agree with the assumption.

Figure 11 Respondents response on role of least bid evaluation for contractors to be innovative



Source (Survey Analysis, June, 2021)

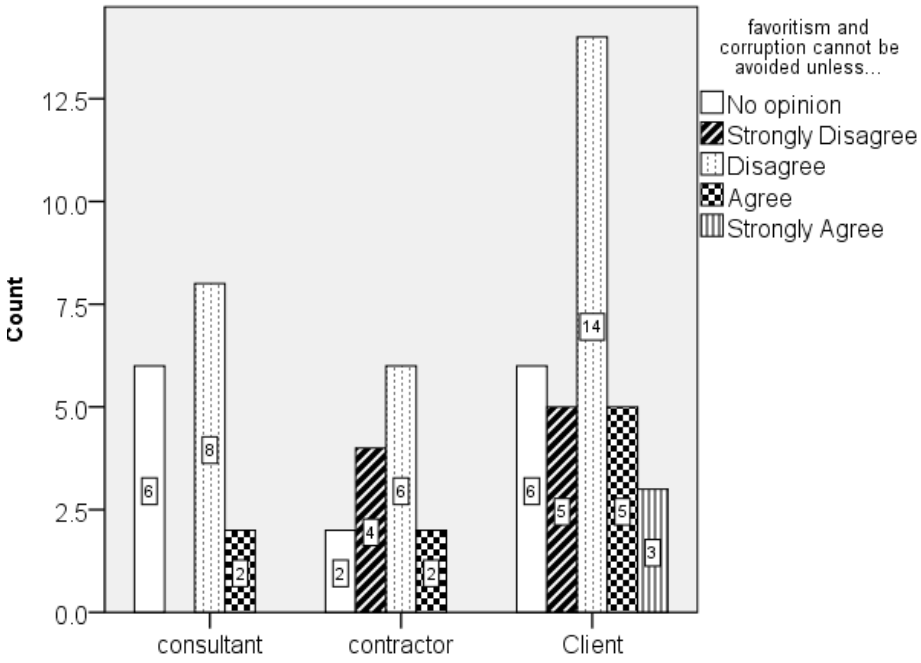
As per the study findings the assumption that competitive least bidder method of bid evaluation encourages contractors to be innovative is strongly dis agreed by 20 respondents out of 64. 24 respondents disagree with the perception and those 8 respondents they got no

opinion on the idea. The left 12 respondents agree and strongly agree on the case that the assumption of traditional bidding practice makes contractors to be innovative is logical.

H. Favoritism and corruption cannot be avoided unless least bid procedure is used

According to the survey, the overall output of the survey verifies that 38.1% of respondents out of the 63 disagree with the assumption that least price bid evaluation is the only way to abolish fraudulent practices in bid process. Around 19% of total population also verifies their strong disagreement on the thought whereas 22.2% of respondents accept the idea. On the other hand, 11.1% of the respondents verify that they have no attitude concerning the thought. The summary of respondent's attitude is presented in the figure below:-

Figure 12 Respond on relation between least bid and corruption



Source :(own survey, July 2021)

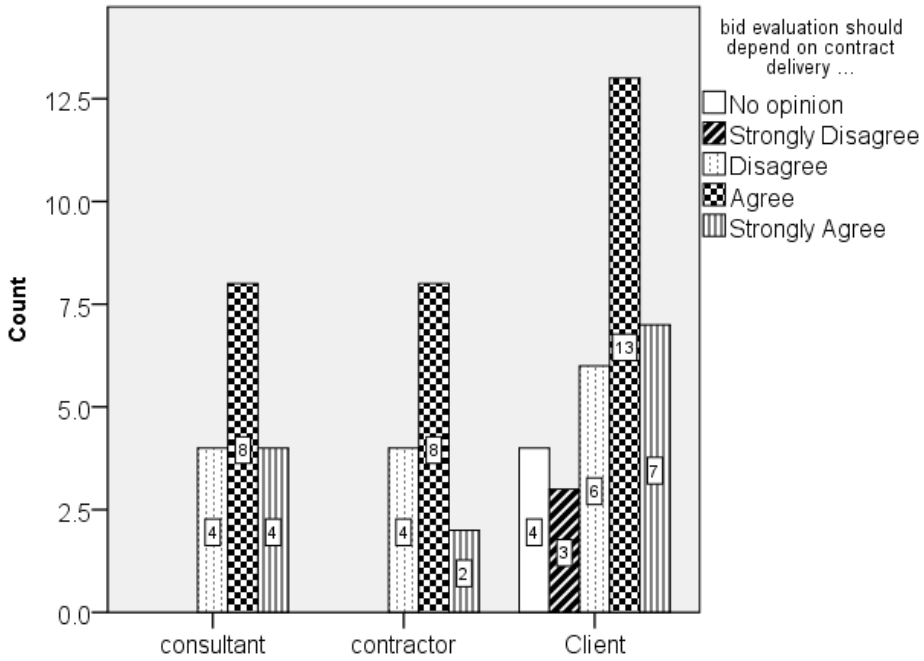
Most of respondents don't accept that least bid evaluation is the only guarantee to eradicate favoritism and corruption in due process of evaluating bidders. That is why 35.9% and 18.8% of respondents indicate dis agree and strongly disagree grades respectively. On the contrary, 20.3% respondents got no opinion about the speculation.

When we come to agree and strongly agree grades, the study found out 21.9% agree least bid evaluation is the only way to avoid corruption and favoritism whereas the other respondents left only 2 in number strongly agree with the idea.

I. Bid evaluation method should depend on the type of contract delivery (e.g. design-build-bid, design-build, turnkey, BOT)

The output of the survey verifies that, 39.4% from case study firm, 57.1% from contractor and 50% from consultants side respondents agree on the idea of selecting bid evaluation method based on the contract delivery type going to be applied. On the other hand, 18.2% from client side, 6.3% each from both contractor and consultant sides thought they disagree if bid evaluation is going to depend on the type of contract delivery. In addition 6.3% of respondents prefer to give no comment on the practice. The output of this particular survey is discusses as shown in the figure below:-

Figure 13 Respondent's attitude on bid evaluation based on contract delivery type



Source (Survey Analysis, June, 2021)

The study found out that the selected respondents of Addis Ababa construction bureau professionals Prefer if type of bid evaluation method is basically chosen according to the project delivery type going to be held.

When we refer the study findings, above 80% of respondents agree and strongly agree on the proposed bid evaluation method of awarding contracts on type of contract delivery. Only 2 respondents prefer bid evaluation should be identical for all type of contract delivery systems. On the other hand, 6 respondents in the survey give no positive or negative suggestions that their percentage of responding lies on 9.4% out of the total 100%.

4.3.2.7 Additional opinion from respondents

In addition to responding to the questionnaires two respondents both from engineering procurement team forwards their additional comments as presented below.

Opinion 1:- this respondent said that nowadays it becomes very common that most of contractors become claim conscious and concentrates on supplementary and variation order rather than offering the advantageous unit rate during financial competition. That is why they offer abnormally low bid price comparing to the engineers estimate and average of bidders amount just only to win the bid. The main reason for their attitude to become claim conscious is that taking advantage of the poor drawing and specifications included on the bid document. Not only these but also variable need of client after commencement of projects which forced to prepare additional supplementary agreement or variation orders. As a result the contractor supposed to compensate the bid amount by amendments made in the form of variations or supplementary agreements.

Opinion 2:- the participant said that some contractors submit illogical lowest bid price in favor of winning the bid and assumes to cope up financial scarcity by using poor quality materials during implementation phase. This is why many of public building construction projects suffer a lot of quality problems for the intended purpose.

The participant also said that especially the MSCE abnormally low bidders think that the trend of penalty and clients commitment to go to court after termination is poor that it is not that much devastating for their company if they quit their task whenever they want. Even though their company is blacklisted they can easily take out another license because there exists poor check and balance by the firm who is responsible in awarding construction licenses. The participant finally point out the contractor's attitude usually in front loading is another problem with lowest bidding practice. Meaning they offer much amount on works

that are going to be done primarily like site clearance, excavation, foundation works and they quit their task after the payment of the listed works is awarded for them.

The participant's forward opinions and additional information they have regarding the questionnaires as stated above. The opinion regarding front loading is usually for MSCE contractors because MSCE Contractors are not asked to bring performance bond.

4.3.2.8 Comparison of Research findings with related studies

Mechegiaw, (2012) finds out that, competitive least bid evaluation method is the major bid evaluation method adopted on public construction projects undertaken by the federal government. The researcher also finds out, the performance of public projects undertaken by awarded on competitive least bid method shows less than 100% progress compared to proposed schedule. The researcher also finds out that, many projects under the study suffers a lot due to financial and material shortages. In addition to financial and material shortage, poor quality problem was found; the reason for this problem was tendency of contractors to compromise their price because they had won the tender with abnormally low bids.

Mosisa (2006) In a survey conducted in the Oromia regional state, non-existence of real competition during contractors selection; excessive time overruns; compromising quality; and escalation of the final project cost from the estimated cost were the major problems associated with the existing approach of delivering projects.

Gebru (2018) on research entitled Bid Evaluation Process on Non –Residential public building projects found out that, Absence of minimum financially offer threshold on the public procurement regulation, projects are awarded to abnormally low offer on least offer bases and apparently those projects are suffering financial and quality problems. The study shows that absence of minimum bid evaluation technical criterion and sub criterions in the procurement manual has lead the public procurement units to exercise different scope of requirements for similar projects. As well as setting subjective criterion on bid evaluation has become the fifth most influential problem on the current bid evaluation and contractor selection process non-residential public building projects.

The findings of this study is similar to findings of the above studies that the major bid evaluation method found out in this study is also competitive least bid procedure. In addition, the performance of the projects with respect to their schedule is poor that many projects suffer due to excessive delay and quality problems.

However, the finding of this particular research differs from other research findings that the research includes document review of projects undertaken by the researcher himself and suitable bid evaluation were also suggested.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

The procurement method applied plays a major role for successful completion of construction projects. This is because the client necessarily needs to award the contract for the right contractor in the right price as per the magnitude of the project. This study investigates the impact of least bid awarding system on performance of public construction projects in Addis Ababa city construction bureau. The researcher has tried to explore opinion of professionals composed from case study bureau, consultants and contractors participating on projects of the bureau. The respondents were asked about their feelings on the current least bid evaluation procedures. They were also asked to forward their opinion on the other alternative bid evaluation and contract award methods.

Meanwhile the following conclusions are drawn based on both desk study done on 21 projects and 63 questionnaires collected from proper respondents.

- The research desk studies were done on those projects awarded to responsive least bidder bid evaluation system. The study also focuses on projects commenced on and after 2011 E.C. again the number of financial bidders for most projects was found less than six.

- It can be concluded that most of projects are awarded for winners with less contract amount in relative to all bidders average price.

- The researcher observes that the engineering estimation of many projects are not documented. These are because the current bid evaluation in practice does not incorporate engineers estimate.

- In the researcher's effort to compare winners offer with engineers estimate, the researcher concludes that only few projects are awarded to higher amount than the engineers estimate.

- The performance of only one project with respect to the schedule was found above 100%.the rest of projects as compared to schedule falls below 100%.

- The research concludes that above 50% of projects under the study suffers a lot in finance, material, equipment and manpower shortage.

- The research concludes that construction projects built by Addis Ababa City construction bureau as a client are suffering a lot due to delay. The contractor's progress as per the schedule findings shows that most of the projects are not progressive as per the proposed schedule. Most of the projects suffering due to excessive delay are projects awarded on the competitive low bid method.

- The document review and detail discussion with the contract administrators verifies most of projects suffering by delay, financial shortage and poor quality are those constructed by MSCE.

- Through the researchers observation most of the projects suffering by delay, financial scarcity and quality problem are those awarded for abnormally low bidders in relative to the engineers estimate and average of bidders offer.

- Relatively good work performance, material quality and progress as per the contract period is observed on projects awarded to least bidders whose offer was nearly equal or above the engineers estimate and average of all bidders offer.

- The study concludes that the main bid evaluation and contract award method adopted in Addis Ababa construction bureau for public building construction projects is the least competitive bid evaluation.

- Even though the least bidder is the major bid evaluation and contract award practice, the research shows that fixed price and restricted biddings are rarely exercised by the firm.

- Among the described bid evaluation and contract award methods ,the respondents shows their frustration towards the responsive least bidder method that most of them agree for its negative impact on public budget, contractors profit, dispute, quality control and durations.

- The research concludes that the other alternative bidding procedures other than the traditional system are accepted by respondents and preferred to be practical.

- Most of respondents does not believe that the competitive least bid method shapes contractors to be innovative.

- It can be concluded that most of respondents agree if bid is evaluated considering the aggregate value of both technical and financial results/subjective rating/. Obviously, it is known that the firm uses this method for bid evaluation of construction consultants.

5.2 Recommendations

The conclusions of the research verify the poor performance of public building projects built by Addis Ababa city construction bureau. The researcher recommends the public body to look for other bid evaluation systems rather than the current traditional bid evaluation technique because projects under low bid system are suffering due to delay, poor quality and cost overrun problems.

- The researcher strongly suggests technically and professionally to apply the engineers estimate and average bid methods which were also preferred by professional respondents of this study. The reason for this is relatively logical price with current market and profit margin is achieved in applying the above methods relatively to the low competitive bid. The overall average method is better because even though some bidders offer abnormally low bid but there are also logical bidders so that the average result may come near to the right price or reflect the actual construction cost for completing the task with desired quality, time and cost. On the other hand assuming the estimation is properly done, the engineers estimate is also better because of its advantage of awarding contract for the right company based on current market price with logical price to win the bid considering healthy profit and expenditure cost.

- The researcher strongly argue the bureau needs to revise the bid evaluation of micro and small construction enterprises legally especially at sub city levels because the document review and informal interview with professionals and bureau heads predicts the rate of delay, termination and cost overrun of projects constructed by the enterprises is high.

- As approved by respondents of this research, technically, the firm needs to adopt alternative bid evaluation methods based on the type and complexity of projects instead of applying the same method for all types of projects. Adopting technical prequalification and aggregate value of technical and financial results to evaluate bid is favored by the participants of these study.

- The research verifies that the performances of Addis Ababa construction bureau public building projects are poor in terms of schedule, cost and quality. A number of terminations and disputes also discovered between the client and contractors. In addition, contractors disappear after taking the advance payment that public money is disseized by these illegal companies. In addition, the respondents show there frustration to the least bid evaluations and appeal for other alternative bid evaluation procedures necessarily needs to be applied. Therefore the researcher recommends the concerned body to deeply investigate the extent of the negative impact which the least bid evaluation method exerts on the Ethiopian construction industry.

- It is recommended legally, technically and professionally that the concerned body to appeal for consultancy and jointly work with higher professionals and stakeholders including private construction company when there is a need to change the current bid evaluation system.

- It is also recommended professionally further studies have to be done on future by professionals, public bodies and construction stakeholders to additional investigation and findings in favor of assuring consistent and healthy construction industry.

REFERENCES

Abdo, A., 2006. Delays in Public Building Consruction Projects & Their Consequences. July.

Abdurezak, M. & Neway, S., 2019. Causes of Delay in Public Building Construction Projects: A Case of Addis Ababa Administration,Ethiopia. *Asian Jiurnal of Managerial Science,* Volume 8 No 2, pp. 7-8.

Addis Negari Gazeta, 2011. Addis Ababa City Administration Bureau Proclamation Number 64/2011.

A. G. & H. S., 2006. Predatory bidding in competitive tenders. *Springer Science + Business Media.*

Alexanderson, G. & Hulten, s., 2006. Predatory Bidding in Competitive Tenders: A Swedish Case Study. *European Journal of Law and Economics,* pp. 29-36.

Bedford, T., 2009. Analysis of The Low Bid Award System In Public Sector Construction Procurement.

Bekele, A., 2005. Alternative Dispute Resolution Methods in Construction Industry.An Assessment of Ethiopian Situation. July.

Bochenek, J., 2014. *The Contractor selecion criteria in open and restricted procedures in public sector in selected Eu countries.* scczecin,poland, Elsevier Ltd..

Bochenek, J., 2014. The Contractor Selection criteria in Open and restricted procedures in public sector in selected EU countries. *Elsevier procedia Engineering.*

Chekol, G. A., 2014. Public Procurement Reform in Ethiopia:Factors Leading to Effective Public Procurement Implementation. *European Journal Of Business and Management,* Volume 6,No 23, p. 153.

D. K. & J. K., 2011. Performance Information Procurement System in the netherlands. *Malaysian Construction Research Journal,* Volume 8/No 1.

Dowle, W. & DeStephanis, A., 1990. Preparing bids to avoid Claims. *Construction Bidding Law.*

ECSA, 2007. Addis Ababa: Ethiopian Central Statistics Agency.

Ellias, M. & Zohar, H., 2017. "Buying Time" An Innovative Procurement Concept for Transportation Projects..

Farooqui, R., 2008. An Assessment of General Trends Adopted For Bidding And Procurement in The Construction Industry Of Pakistan,First International Conference On Construction In Developing Countries (ICCIDC). *Advancing and Integrating Construction Education,Research and Practice.*

Gebru, F., 2018. Bid Evaluation Process on non Residential Public Building Projects. Volume 1.

Goundar, S., 2012. Research Methodology and Research Methods. *Research Gate,* March.

Hardy, 1978. Bid Evalution study for the World Bank. Volume 1.

Hatush, Z., 1998. Criteria for Contractor Selection. *Construction Management and Economics,* pp. 19-38.

IO AJE, T. O. D. O., 2012. Role Of Construction sector in Economic Growth. *FUTY Journal of the Environment,* Volume 7 No. 1.

Iritshad, A., 1993. Alternative Bid-Evaluation and contract Award Systems. Volume 1.

Jan, T. & Baynesagn, A. A., 2017. The practice of Performance-Based Contracting(PBC) In Developing countries Public Procurement:The case of Ethiopia. *Journal of public procurement,* 17 October, Volume DOI:10.1108/JOPP-17-03-2017-B005, pp. 14-15.

Khan, T. H. & Khan, A. Q., 2015. Effects of Lowest Bidding bid Awarding system in public Sector Construction Projects in pakistan. *Global Journal Of Management and Business Research,* 15(1 Version 1.0).

Kothari, C., 2004. Research Methodology:methods and techniques.

Lukas, K., 2015. *International Construction Contract Law.* 1st ed. Prague: John Wiley and Sons Ltd..

M.Skitmore, 1998. Selecting an appropriate procurement method for the construction process. *Construction Management and Economics*, Volume 16,no 2, pp. 221-223.

Masteman, 2002. *An Introduction to Building Procurement systems.* 2nd ed. London: Spon Press.

Mechegiaw, L., 2012. Performance study of Lowest Bidder Bid Awarding System n Public Construction Projects.

Mosisa, L., 2006. Alternative Project Delivery Methods for Public Constructions:cases in Oromia Region. September.

MOWUD, 1994. *Standard Conditions of Contract For Construction of Civil Work Projects.* Addis Ababa: MoWUD.

MOWUD, 2006. Addis Ababa: Ministry of works and Urban Management.

Musanzikwa, M., 2013. Public procurement system challenges in Developing Countries:the case of zimbabwe. *International Journal of Economics,Finance and Management Sciences,* p. 122.

Paulraj, A., 2006. levelsof strategic purchasing:impact on supply Integration and Performance. *Journal of purchasing and supply management,12(3),* 12(3), pp. 107-122.

P. G., 1993. Average Bid Method Competitive Bidding Strategy. *Journal Of Construction Engineering and Management,* March.Volume 119,No 1.

PPA, 2009. *FPPA No.649/2009.* 15th ed. Addis Ababa: Public Procurement and property administration Agency.

PPA, 2009. *Proclamation No 649/2009.* 15 ed. Addis Ababa: s.n.

PPA, 2009. The Ethiopian federal government procurement and property administration proclamation no 649/2009. 9th September, Volume 60, pp. 4880-4896.

PPA, 2011. *Public Procurement Manual.* Addis Ababa: Public Procurement and Property administration.

R. R. & R. S., 2006. *A multiple decisive faactor model for construction procurement system selection,.* 6th Annual Research conference ed. University college london,UK: The Royal inistitutionof Charterd Surveyors,.

Saalama, M., 2006. Investigating the criteria for contractor's selection and bid evaluation in Egypt. *Research Gate,* p. 536.

Taro, Y., 1967. Statistics,An Introductory Analysis. Volume 2nd Edition.

Tarricone, P., 1993. Deliverance. *American Society of Civil Engineers,* 63(2), pp. 36-39.

Walker D.H.T, R. S., 2008. Procurement systems: A cross-industry Project management perspective.

Zohar, H. & Ellis, R., 1992. Multi parameter bidding system-innovation in Contract Administration. *Construction Engineering and Management,* 118(1), pp. 142-150.

APPENDIX 1

DATA SHEET

Study on Impacts of Least Bidder Awarding practice on Public Building Projects: The Case of Addis Ababa City Construction Bureau.

Project name: ----------

Project ID No/LOT: ----------

Type of work: ----------

Location: ----------

Summary of Bidders Financial Evaluation

Company Name	Offer amount after finance arithmetic check(Birr)	Remark
Company no 1		
Company no 2		
Company no 3		
Company no 4		
Company no 5		
Company no 6		
Engineering Estimation		

CURRENT STATUS OF THE PROJECT

Description	**Values**	**Remark**
Date of Contract agreement signature		
Project commencement date		
amount of main contract agreement(birr)		
Rebate		
Supplementary agreement		

(birr)		
Variation order (birr)		
Total amount birr		
Contract period		
Expected Finishing date		
Additional time given		
Extension of time given		
updated completion date		
delay in days		
delay in %		
Percentage of work scheduled to be done		
Actual physical performance in percent		
Overall Project status		

Evaluation of the contractor's performance

Parameter/criteria	**Excellent/Good/Fair /Poor/unknown**
In terms of work accuracy, thoroughness and competence with respect to specifications.	
Quality of materials perspective	
Progress as per the schedule	
Financial status	

Any other comments:

_____

_____

_____

APPENDIX 2

Dear Respondents,

This is MSC research study on '**Study on Impacts of Least Bidder Awarding Practice on Public Building Projects: The Case of Addis Ababa City Construction Bureau**" the questionnaire is seeking your invaluable opinion on the subject. The results of this dissertation could go a long way in providing solution, with appropriate knowledge when dealing with employees and stakeholders.

Please, answer the questionnaire as fully as possible. Your Responses will remain totally confidential and at no time be directly attributed back to you. Instead, they will be aggregated with responses from other subjects in the survey. Please ensure that your name does not appear anywhere on this questionnaire. Should you need any clarification regarding this questionnaire should you need any clarification, please contact me on +251-910-99-03-57. Thank you for your willingness.

QUESTIONNAIRE

Impacts of Least Bidder Awarding Practice on Public Building Projects: The Case of Addis Ababa City Construction Bureau:

Identification (not mandatory)

Position_____

Address_____

1. Educational background?

1. BSC Degree
2. MSC Degree
3. PHD Degree

2. Relevant experience in the firm?

1.2-5 years

2. 5-10 years

3. 10-15 years

4. above 15 years

3. How would you describe the firms Micro and Small construction enterprise/MSCE/ bid evaluation procedure?

1. Based on bid price only/least bid
2. Based on bid price and responsiveness on technic

3. Based on price, responsiveness and other factors

   (Please specify):_____

   3.1 How would you describe the firms contractor bid evaluation procedure?

4. Based on bid price only/least bid
5. Based on bid price and responsiveness on technic
6. Based on price, responsiveness and other factors

   (Please specify):_____

4. Are you satisfied with the bid evaluation procedure currently in use by Addis Ababa construction bureau?

A. Yes
B. No
C. Somewhat

5. Please indicate frequency, in % of the organizations project awarded under the following project delivery and bid award methods.

5.1 competitive (least bid)

A. 0%-25%
B. 25%-50%
C. 50%-75%
D. 75%-100%

5.2 Request for proposal

A. 0%-25%
B. 25%-50%
C. 50%-75%
D. 75%-100%

5.3 Restricted bidding

A. 0%-25%
B. 25%-50%
C. 50%-75%
D. 75%-100%

5.4 Invitation by reputation/direct cost contract delivery/fixed price (ቁርጥ ዋጋ)

A. 0%-25%
B. 25%-50%
C. 50%-75%

D. 75%-100%

6. Does the least bid evaluation system has an impact on project cost, time and quality?

A. Greatly negative impact

B. Have a positive impact

C. Neither positive nor negative impact

D. No clue

7. Use the following grading scale to indicate your ratings of each method on the basis of the attributes listed:

   6. Will always have a positive effect

   5. May sometimes have a positive effect

   4. Will have no effect

   3. May sometimes have a negative effect

   2. Will always have a negative effect

   1. No opinion

Bid evaluation and contract award methods	Owners cost/gov't budget	Contractor profit	Disputes/ claim	Quality control	Project duration	Other please specify
Least bid(a)						
Competitive average bid(b)						
Evaluation using on engineers estimate(c)						
Invitation/direct cost/fixed price (d)(ቁርጥ ዋጋ)						
Restricted(e)						
Subjective rating(f)						

Briefing

a- Conventional PPA practice of awarding contracts to responsive low bidder.

b- Even though competitive, bid is awarded to particularly for the bidder whose offer is closest to average of all bidders.

c- Competitive system with provision to award contracts to lowest bidder which is within some predefined range (±20%) of the engineers estimate.

d- Contract awarded for selected contractors on unit rate and engineer's estimate without competition. Practiced in Addis Ababa Construction bureau.

e- Competitive but for shortlisted contractors by the client say 6 bidders. There is threshold as per PPA/AA based on procurement type usually contract amount >15 million in construction. May be applied when open procurement fails above 2 times as well as project is urgent but not sensitive.

f- Factors such as references from previous jobs, financial performance, bonding capacity, technical competence are subjectively rated and combined with the bid price to develop a scoring system. Bid is awarded to the highest score.

8. With respect to the current bidding practices as you know them please indicate the degree to which you agree or disagree with the following statements using the following scale.

4- Strongly Agree; 3-Agree; 2-Disagree; 1-strongly dis agree; 0-No opinion

	DESCRIPTION	RANK				
		4	3	2	1	0
A	Competitive low bidding system has worked well in the past and therefore will work well in the future.no need to change					
B	Competitive system with provision to award contracts to bidders closest to the average of all bidders should be adopted.					
C	Competitive system with provision to award contracts to lowest bidder which is within some predefined range(±20%) of the engineers estimate should be adopted					
D	Only Direct cost project delivery procedures should be used. Totally no financial competition (ቁርጥ ዋጋ)					
E	Bidding procedure should be depend upon type and complexity of the project (type refers like Buildings, utilities, industrial, Electro-mechanical and the like were as complexity is in terms of project structure, technical, temporal and directional complexity)					
F	Aggregate value of technical qualification and price should be used (Average weights for technical and financial evaluation)					
G	Traditional bidding procedure(competitive low bid)encourages contractors to be innovative					
H	Favoritism and corruption cannot be avoided unless least bid procedure is used					
I	Bid evaluation method should depend on the type of contract delivery (e.g. design-build-bid, turnkey, BOT)					

Any other comments, if necessary

_____

_____

_____