

Determining The Effects Of Awarding Lowest Bid Price System On The Construction Projects Of Ethiopian Southern Nation.

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ABSTRACT-Identifying the effects of low bid award system in construction projects can be used as benchmark to find alternative method to low bid award system in the future of construction industry. The results of questioner survey conducted to determine the effects of awarding lowest bid award system in construction projects of Ethiopian southern nation are presented in this study. Personnel from consultants, owners and contractors are among the survey's respondent. The result of the study outlines promote transparency, avoid fraud and corruption, promoting competition amongst contractors, excessive time overrun, compromise quality and hindering profitability of contractors as the top ranked effects of low bid award system. Construction industry participants have started recognizing that accepting the least price bid does not guarantee maximum value. Achieving a value-based procurement approach is a challenge, particularly for the Pakistani public sector clients, who are limited in their ability to evaluate the competitive bids based solely on the lowest-bid award system. Persisting problems of inferior quality of constructed facilities, high incidence of claims and litigation, and frequent cost and schedule overruns have become the main features of public construction works contracts. This research was undertaken to assess the performance of public owned construction projects awarded on a lowest bidder bid awarding system.

Key words: Construction project, low bid, Contractor, Effect

1. Introduction

The construction business is one of the most important industries, requiring significant financial and human resources. The national economy relies heavily on design and building. Because bid and procurement difficulties are so closely linked to the construction sector and its players, improving construction procurement is now in the best interests of construction industry and community (Tariq Hussain Khan , et al., 2015). Companies must maintain their competitiveness in order to survive in the national and worldwide market as a result of globalization. Contractor competitiveness refers to a company's capacity to win a competition, and winning a competition requires the appropriate strategy. Contractors who have a good plan can adapt their actions to the changing environment and outperform their competitors (Y. Tan, et al., 2012). Ethiopia's project bid awarding method is currently based on least bid pricing auction system. The construction industry, on the other hand, is critical to the national economy; this bid system and procurement is a significant and integral component of construction project performance; it should be a focus of attention in the construction world due to the time, cost overruns, and quality of work associated with construction projects. So many projects fail to meet their goals and objectives (BinyamLetarge, et al., 2016).The practice of awarding contracts to the lowest bidder was created to ensure that a project's completion costs were kept to a minimum. This technique is nearly universally approved in public construction projects because it not only insures a reduced price, but also eliminates fraud and corruption ((Dr.), 1993) .The construction sector faces a critical difficulty in selecting the best bidder for a project (Alexanderson, G. , et al., 2006). It is more vital to find and implement a proper bid evaluation process that takes into account contractors' performance in order to ensure that projects are completed successfully and that the best performance is achieved during and after

construction. Furthermore, the typical low-bid technique tends to encourage more antagonistic relationships between the contractor, the designer, and the owner, rather than cooperation or coordination, and the owner is generally exposed to contractor claims over design and constructability difficulties (Dowle, W.J. , et al., 1990). Public sector owners are under growing pressure to enhance project performance, complete projects faster, and lower the cost of operating their construction programs in today's construction climate. As a result of these pressures, the Ethiopian construction sector should develop alternative procurement and contracting procedures that take into account criteria other than price in the selection process in order to improve project quality and performance (Ahmed, I., 1993). The study's goal was to determine the impact of awarding construction projects to the least bidder. Almost all projects are underperforming and incurring liquidated damages due to the use of substandard local construction materials, delays, and failures, which is the cause of contractor financial shortages (BinyamLetarge, et al., 2016). There are governmental building construction projects in Ethiopia's Southern Nations, which are built by various contractors and owners under the supervision of consultants. The system evaluation technique of awarding, bad scheduling and programming throughout construction, missed and changed design, and inviting a lot of projects at once, particularly for lower grade contractors, are the key causes of poor project performance. The main reasons for the lowest responding bidders' poor performance are financial difficulties, inviting multiple projects at once, and a lower project estimation. These issues may cause the project to fail, as well as making it difficult to meet deadlines and maintain quality in the construction business (BinyamLetarge, et al., 2016).

2. Objective

Mainly, the scope of the study is to analyze the performance of public owned construction projects which are awarded by the lowest bidder bid awarding system. To highlight the weaknesses, performance, opportunities and implications of the public owned construction projects that are awarded on the basis of lowest bidder bid system. The objective of this study is to determine the effects of low bid award system in construction projects of Ethiopian southern Nation.

3. Literature review

The Federal Government of Ethiopia is the largest buyer of construction materials in Ethiopia. The competitive low-bid technique, in which contracts are awarded to a responsive contractor who offers the lowest price, is the most popular procurement method. The establishment of relevant and adequate criteria is required for the prequalification and bid evaluation processes. The evolution of project complexity and client needs over the last two decades has resulted in an increase in the adoption of alternate project delivery systems. The evaluation, prequalification process, as well as the quantification criteria, are intact in their original form. The least price win strategy has both advantages and disadvantages. The method clearly benefits from encouraging contractor rivalry.

Contractors are compelled to reduce their costs, usually through innovation, in order to win bids and preserve profit margins. Furthermore, the process benefits the public sector in particular because it promotes transparency, which is an important criterion in public policy. However, permitting projects to be awarded purely on the least price has inherent limitations. The main disadvantages of using least bid price win strategy are delays in achieving contract deadlines, increases in final project costs as a result of variation, quality compromise and an antagonistic attitude between contracting parties. (Gazeta. F. G., 2004) Furthermore, least bid price win mechanism promotes unqualified bidders to engage in the competition while discouraging qualified contractors from doing so. The criteria used for bid evaluation should, according to (Kelley, M.N. , 1991) represent the client's objectives. These are that bids are adequately responsive to the contract specifications and that bidders are properly qualified to complete the project. The bid that maximizes the return on the client's investment becomes the criterion for picking the winning bidder.

As a result, he has requested that bidders present a schedule of the payments they estimate to be due during the contract period. According to a study done in Oromia region of Ethiopia, the lack of true competition to select contractors, Delay, adversely affecting quality, cost overrun were the major issues associated with the current approach to project delivery (Mosissa, L. , 2006). The Ethiopian construction industry has recognized poor initial

finance of the project by the contractor, as well as a lack of sufficient supplies of materials, machinery, and workforces as primary causes of delays during the building phase (Kelley, M.N. , 1991). Multi-organizational activity is involved in the construction process. As a result, dispute and conflicts can arise at any point along the contractual chain: between the client and the consultant, the client and the contractor, the client and the subcontractor, and so on. The project delivery system chosen is one of the key aspects among the various causes of disagreements in the construction project (Herbsman, Z., et al., 1992).

Currently, the public sector procurement of construction is largely based on the lowest bid award system. The customary practice of awarding contracts to a lowest bidder was established to ensure the least 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. While the low-bid procurement system has a long-standing legal precedence and has promoted open competition and a fair playing field, a longstanding concern expressed by owners and some of their industry partners is that a system based strictly on the lowest price provides contractors with an incentive to concentrate on cutting bid prices to the maximum extent possible (instead of concentrating on quality enhancing measures), even when a higher cost product would be in the owner's best interest, which makes it less likely that contracts will be awarded to the best performing contractors who will deliver the highest quality projects. As a result, the low-bid system may not result in the best value for money expended or 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, and the owner generally faces increased exposure to contractor claims over design and constructability issues. (Dr.A.Paulmakesh, 2021)

3.1 Competitive Low Bidding (Price-based)

In the procurement process, keeping procurement costs low is a basic practice for many organizations interested in exploiting the competitive aspect of bidding. The least price win system is commonly used method of selecting and awarding contractors. According to this technique, the lowest-bidder wins the contract, i.e., the contract is awarded to the most responsive and compliant bidder who is willing to meet the contract's terms for the lowest price. Construction procurement in the public sector is currently dependent on the lowest bid award system. The practice of awarding contracts to the lowest bidder was created to ensure that a project's completion costs were kept to a minimum. The least bid price win system has both advantages and disadvantages. Promoting contractor competition and forcing contractors to cut their prices, usually through innovation, are both evident advantages of the process. Furthermore, the procedure benefits the public sector in particular since it promotes transparency, which is an important criterion in public policy. Allowing projects to be awarded primarily on the lowest price, on the other hand, has drawbacks. The key disadvantages of least bid award system include delays in achieving contract deadlines, increases in final project costs, a proclivity to reduce quality, and an antagonistic attitude between contracting parties. As the sole award criterion, the lowest bid price promotes unqualified contractors to make offers (Hatush, Z. , et al., 1997), as well as bidders who submit a very low bid with the objective of recovering their losses through modification orders and claims, often known as predatory bidding (Nmez, M. S., , et al., 2003). As a result, the lowest bid isn't always the best deal. The biggest disadvantage of the low-bid method is the risk of granting a construction contract to a contractor that files an artificially low bid price, either accidentally or purposefully. Such an incident frequently works against the owner and contractor by generating arguments, increased expenses, and schedule delays (Photois G. I. , 1993).

4. Methodology

A wide range of stakeholders participating in construction projects in the southern nation of Ethiopia were targeted in order to determine the effect of low bid awarding system. Project managers, consultants, contractors, client representatives, and construction managers were chosen at random. Previous research conducted in construction projects in different area of the world were used to create a questionnaire. It was organized using a priority scale (1=very low, 2=low, 3=medium, 4=high, and 5=very high). The survey was sent to both public and private organizations, including building owners, consulting firms, and contractors working on construction projects. A random sample of clients, consultants, and contractors received the questionnaire. The following is a description of the sample chosen for each of the three groups:

- Clients include the project's government agency, private organizations, and individual owners,
- Consultants working on building projects and
- Contractors involved in the project.

Respondents were from government and commercial bodies that fund construction projects, as well as the contracting and consulting firms that support them. (Dr.A.Paulmakesh, 2021)

4.1 Data Analyze

Similar research used the Relative Important Index (RII) approach to determine the relative importance of various parameters. Based on replies from consultants, owners, and contractors, this method was used to determine the relative importance of identifying the effect of low bid award system in Ethiopian southern nation.

$$RII = \left(\frac{\sum(W)}{A * N} \right) \dots\dots\dots (1.1)$$

where: W = the weight given to each factor by the respondents
 A = Very high = 5
 N = the total number of respondents.

The RII is used to rank the groups of questionnaire by calculating the average of relative importance index of all factors in the group.

5. Results and discussion

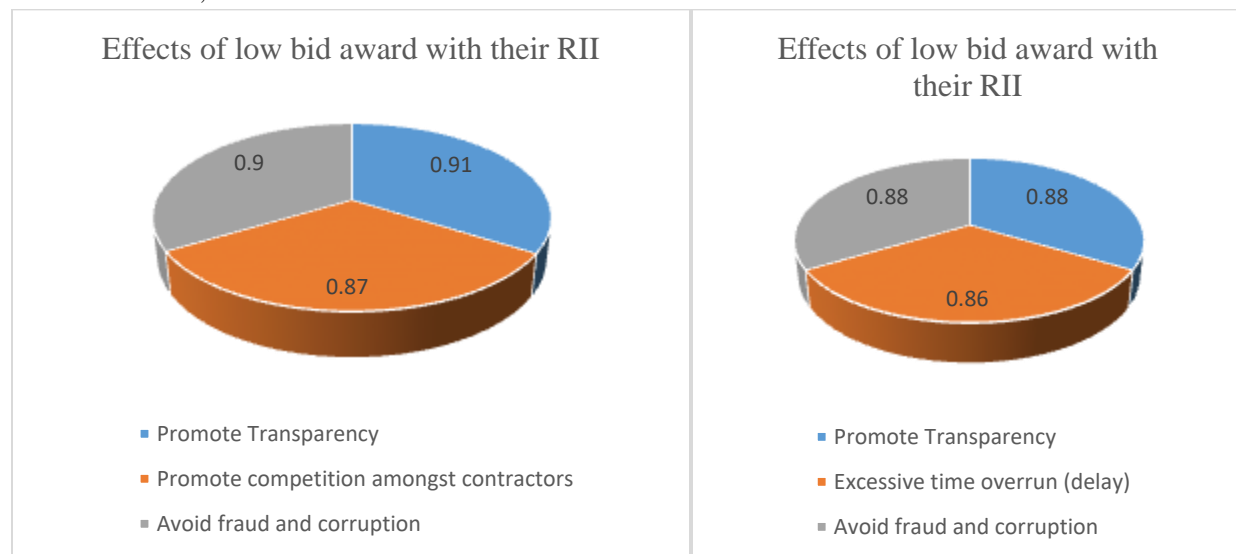
Implications and Concerns In average bidding methods, as described above, all the features of open bidding system are retained. The only variation is that the selected contractor is the one whose bid is close to the average of all the submitted bids. The major risk of the lowestbidding method is the likelihood of awarding a contract to a person or firm that submits, accidentally or deliberately, an unrealistic low bid. Such an occurrence may lead to the owner's disadvantage by promoting disputes, increase in costs, and delays in schedule. To tackle this problem, some countries have adopted the average-bidding method and the contract is awarded to the contractor whose price is near the average- bid price. Average bidding method finds its relative merits over lowest-bid method.

The basic disadvantage of the averagebidding method is that it doesn't promote competition that leads to lesser costs for the client. A breakthrough (technological or managerial) resulting in major money savings will not necessarily be passed on to the client in the form of lower costs, unless all participating bidders are known to have this breakthrough. It has been criticized that average bid method results in considerably higher profits in construction projects (Irtishad, 1993).When such high profits are earned throughout the industry, bid prices are expected to fall gradually and the savings will eventually be passed to the client. It has been claimed that the average bid method would increase contractor profitability and it has the potential to improve relationships between the owner and the contractor.

Table 1. Effects of low bid award system with their RII and Rank at Southern nation

Factors	Consultant		Owner		contractor	
	RII	Rank	RII	Rank	RII	Rank
Promote Transparency	0.91	1	0.88	1	0.62	8
Promote competition amongst contractors	0.87	3	0.82	4	0.63	7
Excessive time overrun (delay)	0.83	4	0.86	3	0.85	2
Escalation of the final project cost	0.61	7	0.63	8	0.78	4
Compromise quality	0.79	5	0.7	6	0.81	3
Create Adversary relationship among contracting parties	0.66	6	0.73	5	0.76	5
Encourages unqualified bidders	0.58	9	0.59	9	0.70	6
Avoid fraud and corruption	0.9	2	0.88	1	0.62	8
Hinder profitability of contractors	0.59	8	0.68	7	0.89	1

From the above table the top three factors selected and summarized in the figure below separately labeled as consultant's view, owner's view and contractors view.

**Fig.1 Consultant's View Fig.2 Owner's View**

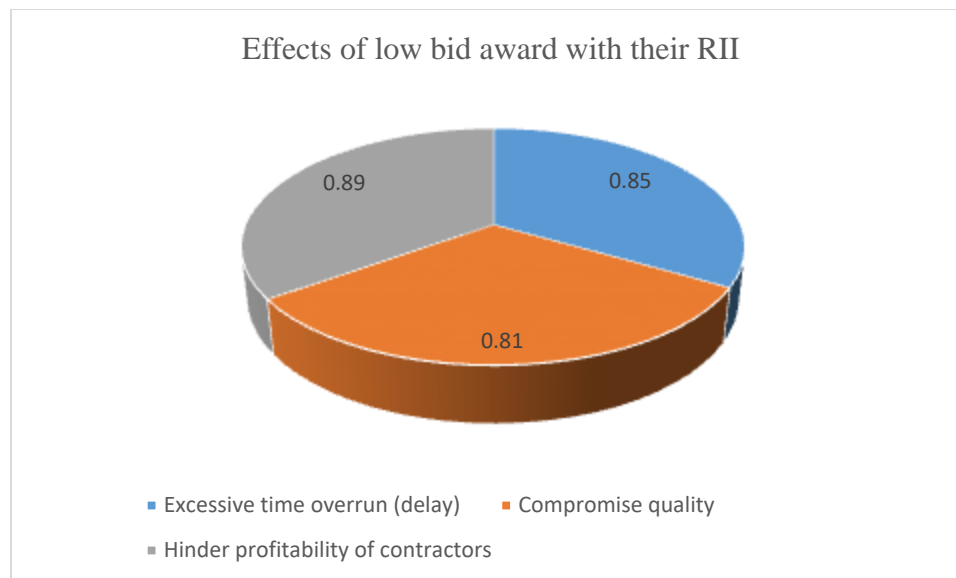


Fig.3 Contractor's View

The study (as summarized in the above table and figures) revealed (ranked) the effect of low bid award system in Ethiopian Southern Nation. According to the study, from consultants point of view respondents believe that Promote Transparency (RII=0.91) is the first effect (positive dimension) of low bid award system this is because (when respondents strengthen their response) transparency is one of the twelve listed key Ethical principle that should be respected in any public sector as a rule in any part of Ethiopia. Avoid fraud and corruption (RII=0.9) this is also positive effect of low bid award system and ranked in the second place. Now day's Ethiopian government is committed to fight corruption that hinders the development of the country. This is why public construction sectors now started requesting the contractor to submit anti-bribery pledge form with the bid to take responsibility and if any corrupt practice(action) is found the contractor automatically rejected (suspended) from the bid. Promote competition amongst contractors (RII=0.87) is also the top ranked effect of low bid award system. Consultants of public sector ranked competition amongst contractors as the positive effect of low bid award system since it ensures transparency, equitable opportunity, and the capacity to demonstrate that the results are the best value for money.

Regarding owners point of view, the top three ranked effects of low bid award system in Ethiopian Southern Nation are promote transparency (RII=0.88), avoid fraud and corruption (RII=0.88) and excessive time overrun (delay) (RII=0.86). Promote transparency and avoid fraud and corruption are equally important and ranked as the first effect of low bid award system. Because most of the bids in the southern region of Ethiopia are prepared by the government office, both the owners and consultants share the same idea regarding these effects and the same idea discussed above for consultants also works for owners. Regarding the third factor (delay with RII=0.86) when contractors win the bid with least price they face financial deficiency. This economic problem results in material shortage, inefficient equipment on site, labour supply problem, shortage of equipment availability and other factors until the contractors searches for additional budget (loan) which totally affect the progress of the project and cause delay (excessive time overrun). (Dr.A.Paulmakesh, 2021)

Furthermore, contractors have also pinpointed their believes regarding the effect of low bid award system. The three top ranked reply from contractors as effects of low bid award system are Hinder profitability of contractors (RII=0.89), Excessive time overrun (delay) (RII=0.85) and Compromise quality (RII=0.81). Most of the projects awarded to contractors who submit least price suffer from delay. This is due to financial difficulty of contractors. Delayed project also faces inflation (market price fluctuation of materials, equipment and labours) which finally results loss of profit. Loss of profit is a frequently used tactic in damages claims, and it is most commonly seen in claims originating from infrastructure contracts, where the aggrieved party will always have a claim for loss of

profits as a result of the contract running late or being terminated before completion. Regarding Excessive time overrun (delay) the idea discussed above also works here. Concerning quality, most of the projects awarded for least bidder faces quality compromise. This is due to several activities performed by contractor to make profit out of it. This reasons can be choosing personnel who lack the necessary abilities with minimum wage, using low quality and damaged materials, replacing the necessary building supplies with inferior brands and materials might result in dissatisfied customers and time-consuming rework requests.

6. Conclusion

The following conclusions are drawn based on the assessment made on information gathered through questionnaires from construction professionals. As it was observed, this study identifies the effects of low bid award system in construction projects of Ethiopia, specifically in southern nation both in positive and negative dimensions. In its positive dimension, the top ranked effects of low bid award system consists of promote transparency, avoid fraud and corruption and promote competition amongst contractors. Whereas the negative dimensions of top ranked effects of low bid award system includes Excessive time overrun (delay), hinder profitability of contractors and compromise quality. In this research, the performance of public owned construction projects awarded on the least bidder bid evaluation and contract award system were assessed. Additionally, it has been tried to investigate opinions of construction professionals from public organizations about the current method of bid award procedure and other alternatives.

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