A STUDY ON KEY FACTORS INFLUENCING BID/NO-BID DECISIONS FOR DIFFERENT CONSTRUCTION PROJECTS IN INDIA

J. Kiran Kumar
Civil Engineering, SRM University, Chennai, India

ABSTRACT

Bid decisions either leads to procuring good opportunities or incurring large loss due to selection of inappropriate projects. The decisions to bid or not, made on experience and instincts have lower success rate compared to decisions made on real time facts governing the entire process. Smart contractors tend to be more factual rather being more heuristic while bidding for a project. To improve the bidding process and the competitiveness over a global market, the contractors need to identify and analyze the key factors influencing the bid process, which in turn boosts the economy of the country. This paper reports the factors influencing the bid decisions obtained through the response from the survey questioning various contractors from different construction projects in India. This study also ranks the factors obtained based on their importance weightages and the top ranked factors being studied using a statistical tool.

Key words: Bid, Economy, Heuristic, Influencing, Weightages.


1. INTRODUCTION

Construction bidding is the process of offering the job by inviting tenders to different parties. The person with least price estimate and satisfying the terms and conditions enlisted by the tenderer wins the bid for executing the project within the stipulated time. The decision to bid or not to bid for the job becomes critical as the consequences on acceptance directly impacts the contractor due to the uncertainty involved in the process. Construction industry in India accounts to 3% in overall GDP growth and future improvement depends on the successful completion of the tendered projects. Hence to complete the work successfully prime importance should be given during the initial stages of the project. Decision making at the earliest stages of construction projects involves a process of gathering information from different sources. Most of the bid decisions are heuristic in nature and often contractors commit to a time consuming and expansive projects as the internal and external aspects are not considered. On the other hand some contractors consider the internal and external factors associated with the bid decisions before committing for a project. This study helps the contractors in identifying the factors influencing the bid/no-bid decision before accepting the proposed work.

Bagies and Fortune (2009), found that 95% agree the consideration of the factors at the selection phase critical. Further 89% of the respondents feel considering the factors influencing the bid decisions at the
selection phase will improve the performance of the company. Shash (1993) explains that a construction company can either negotiate with a client or implement a bidding process to procure the proposed project. The bidding process involves selection of contractors to bid for the project and submitting an estimate to obtain the bid and awarding to the contractor with preferred estimate by the client. Ahmad and Minkarah (1987) conducted a questionnaire survey to discover the factors that influence the bidding decision in the United States. Based on the decision analysis technique a bidding methodology was being proposed to solve the bid/no bid problem. This model analysed the bidding problem in two stages, first stage being a deterministic one that concerns the bid/no bid decision and the second stage being probabilistic as aspects considered were being uncertain. D.K.H. Chua and D.Li (2000), adopted analytic hierarchy process to identify the key factors associated with the bid decisions. Among the top factors are the need for continuity in employment of key personnel and workforce, current workload of projects and relationship with the owner. Egemen and Mohamed (2007) conducted a survey over 80 contracting companies operating in Turkey and identified the key factors along with their weightages. El-Mashaleh (2013) carried out a questionnaire survey targeting the top contractors in Jordan. The study reported the importance weightage and standard deviations of 53 bidding factors and these were further grouped into seven categories.

This study helps in identifying the factors influencing the contractor’s decision in the bidding process in India. This study develops a framework or a model that can be used as a decision tool for evaluating the projects at the initial stages. A questionnaire survey was carried out among various contractors over the southern region of India and the responses were being documented. This survey was designed to rank the factors based on their importance and the top ranked factors being studied in detail giving the contractor a concrete base for making bid decisions.

2. FACTORS INFLUENCING THE BID/NO-BID DECISION MAKING PROCESS

The study aim and objectives necessitated the identification of the various factors that influence the bidding decisions. From the previous studies and literatures, certain potential factors were being drawn and forming the base for questions for undertaking the survey. The importance of these factors was quite important as it was essential in formulating a bid decision model. From the literature, thirteen decision models were recognized including the bid decision model and mark-up determination models. In order to construct these models, the factors governing it must be studied and analyzed in detail. The questionnaire includes questions based on the factors ascertained and the same being rated by the contractors on a scale of 0 to 4. ‘0’ mean very low influencing factor, ‘4’ being very high influencing factor and the importance weights being calculated for all the factors. The questionnaire being divided into two parts, where the first part containing the information regarding the firm, its type, capacity and other descriptive data. The second part containing the questions related to the potential factors influencing the bid decisions.

<table>
<thead>
<tr>
<th>Factors influencing bid decisions</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience and familiarity of your firm with this specific type of work</td>
<td>1</td>
</tr>
<tr>
<td>Amount of possible upcoming profitable projects out for tender in near future</td>
<td>2</td>
</tr>
<tr>
<td>Current financial situation of the company</td>
<td>3</td>
</tr>
<tr>
<td>Project size (total bid value)</td>
<td>4</td>
</tr>
<tr>
<td>Project type</td>
<td>5</td>
</tr>
<tr>
<td>Completeness of the bid documents (drawings, specifications, etc.)</td>
<td>6</td>
</tr>
<tr>
<td>Current workload of projects, relative to the capacity of the firm</td>
<td>7</td>
</tr>
</tbody>
</table>
Having qualified material suppliers &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 8  
Market's direction, whether its declining or expanding &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 9  
Possible contribution in increasing firm's market share and dominance in market &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 10  
Possible contribution to increase the contractor firm's classification &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 11  
Ability to fulfill tender conditions imposed by the client &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 12  
Allowed project duration being enough &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 13  
Possible contribution to increase firm's identity and brand strength &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 14  
Possible contribution in building long term relationships with other key parties &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 15  
Possessing enough required plant and equipment to do the job &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 16  
Having qualified subcontractors &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 17  
Profits made in similar projects in the past &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 18  
Amount of equipment that needs to be hired and the hire rates in market &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 19  
Management of similar size projects in the past &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 20  
Rigidity of specifications &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 21  
Technological difficulty of the project being beyond the capability of the firm &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 22  
Uncertainty related to the construction site condition &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 23  
Allowed duration for bid preparation being enough &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 24  
Penalty conditions for not being able to complete the project on time &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 25  
Current workload in bid preparation &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 26  
Possible number of competitors &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 27  
Need for continuity in employment of key personnel and workforce &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 28  
Possessing enough qualified technical staff to do the job &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 29  
Desire of qualified contractors to bid and win the project &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp; 30  

Table 2 shows the mean and standard deviations of the top 15 ranked factors which provides a strong base for formulating percent mark-up models in order to create a complete framework of the bidding process.
Table 2 Mean and Standard deviation of the potential 15 factors

<table>
<thead>
<tr>
<th>Top ranked factors</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience and familiarity of your firm with this specific type of work</td>
<td>3.583</td>
<td>0.668</td>
</tr>
<tr>
<td>Amount of possible upcoming profitable projects out for tender in near future</td>
<td>3.583</td>
<td>0.668</td>
</tr>
<tr>
<td>Current financial situation of the company</td>
<td>3.416</td>
<td>0.668</td>
</tr>
<tr>
<td>Project size (total bid value)</td>
<td>3.333</td>
<td>0.778</td>
</tr>
<tr>
<td>Project type</td>
<td>3.333</td>
<td>0.651</td>
</tr>
<tr>
<td>Completeness of the bid documents (drawings, specifications, etc.)</td>
<td>3.333</td>
<td>0.778</td>
</tr>
<tr>
<td>Current workload of projects, relative to the capacity of the firm</td>
<td>3.250</td>
<td>0.753</td>
</tr>
<tr>
<td>Having qualified material suppliers</td>
<td>3.166</td>
<td>0.834</td>
</tr>
<tr>
<td>Market's direction, whether its declining or expanding</td>
<td>3.166</td>
<td>0.717</td>
</tr>
<tr>
<td>Possible contribution in increasing firm's market share and dominance in market</td>
<td>3.166</td>
<td>0.937</td>
</tr>
<tr>
<td>Possible contribution to increase the contractor firm's classification</td>
<td>3.090</td>
<td>0.831</td>
</tr>
<tr>
<td>Ability to fulfill tender conditions imposed by the client</td>
<td>2.833</td>
<td>0.717</td>
</tr>
<tr>
<td>Allowed project duration being enough</td>
<td>2.750</td>
<td>0.753</td>
</tr>
<tr>
<td>Possible contribution to increase firm's identity and brand strength</td>
<td>2.666</td>
<td>0.887</td>
</tr>
<tr>
<td>Possible contribution in building long term relationships with other key parties</td>
<td>2.666</td>
<td>1.073</td>
</tr>
</tbody>
</table>

Table 2 indicates that experience and familiarity with that particular work with a mean score of 3.583 is a top ranked potential factor that influences the contractor to bid or not to bid for that work. Other potential factors include amount of possible upcoming profitable projects out for tender in near future, total bid value, project size with respective mean scores shown in the table 2.

3. DISCUSSION

From the above findings, the top potential factors that influence a bid/no bid decision are being discussed below.

3.1. Experience and familiarity of your firm with this specific type of work

The experience of a contractor in carrying out similar work not only ensures successful completion within the stipulated time but also achieving quality workmanship. The experience and the familiarity of the contractor with that specific work proves to be the most important factor influencing the contractor to bid.
A Study on Key Factors Influencing Bid/No-Bid Decisions for Different Construction Projects in India

for that project and also increments the strength of the firm or the company. This factor plays a vital role among many small sized contractors in India as the probability of success is quite high as compared to selection of non-familiar projects.

3.2. Current financial situation of the company
Another important factor to be considered is the financial position of the company or the contractor. This determines the effective completion of the work upon acceptance. Money is an important resource required to mobilize a project and to complete the same within the specified time. Hence the contractor bids for the project only when the financial status is sound and adequate.

3.3. Having qualified material suppliers
Having effective material suppliers for the project is another important factor having a greater impact over contractor’s bid decisions. Materials prove to a vital resource and proper utilization of quality materials and preventing inadequacy or shortage are the key aspects in producing an efficient product. Many small and medium sized contractors tend to utilize the material suppliers in the vicinity of the site of work, so that the costs incurred in transportation and handling reduces subsequently.

4. CONCLUSION
The purpose of this study is to identify and understand the factors that influence the contractor’s decision to bid or not to bid for a proposal. This paper contains the findings of a questionnaire survey conducted among contractors in India and it highlights the importance of considering the factors governing the bid decisions and ranks the same based on their weightages. Factors such as experience and familiarity with specific work, financial capacity of the firm, total bid value, project size are the top potential factors influencing the contractors over bid decisions and the factors such as need for continuity in employment, desire for qualified contractors to bid and win for the project tends to be the least important factors of all. It is also observed that existing client-owner relationship, having qualified material suppliers have a greater impact over the bid decisions.

With the potential factors being ranked, their respective mean and standard deviations are also determined which forms the basis for developing a suitable percent mark-up model. This study serves as a base for understanding the bidding process and guides the contractors in selecting successful projects, keeping the construction sector healthy and adds to the growth of economy both nationally and globally.

REFERENCES
