

# Tender Evaluation Based on Contract Document

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**Abstract.** A large-scale project generally goes through a tender or bidding process in which some phases are terminated by contract document approval before the commencement of a project. The background of this research is various kinds of problems often encountered direct impact during implementation at the process of preparing documents. The research method used is the literature study, observation, and questionnaires. The questionnaire was distributed to 40 respondents using the Likert scale method to look for the Relative Index on a scale of 0.2 (strongly disagree) to 1 (strongly agree). The goal of this research is to find the main causes of problems relating to the process of drafting and examining contract documents in terms of three problem factors so that solutions or suggestions can be found as a basis for consideration in planning contract documents during the bidding process. The outcomes demonstrate that the problem factors can be divided into three, including general, technical, and communication. The dominant factor is the problem of unclear planning drawings (0.784), plus the short duration of the bidding to understand and make bids (0.768). Apart from this, unclear specifications or work plan terms and poor communication between various parties were also major problems in the contract documents (0.768 & 0.768). These problems should be able to be overcome by increasing the accuracy and readiness of the planning and it is also necessary to lay the groundwork for contractual non-conformities.

**Keyword:** bidding process, documents, general conditions, technical data, duration, communications

## 1. Introduction

Tenders generally require a long and complex process, because of the many things that must be done, some clauses must be understood. In general, the contents of these documents in the construction are letters of acceptance, drawings, specifications, schedules, contract conditions, and others listed in the contract agreement [1]. Often time this complex process must be done in a fairly short time, this certainly has an impact on the accuracy and quality of the work.

There are several aspects in evaluating contract conditions, one of which is the potential for problems to occur, this must be anticipated in general conditions among project actors. Although not all things can be anticipated, at least the conditions of the contract can help facilitate the construction completion process. Apart from these aspects, other aspects such as language and fairness regarding contract conditions must also be considered [2].

Managers who have accurate perceptions and effective risk assessments will make wise decisions and get more satisfying/successful results [3]. However, often many problem factors stem from understanding the contents of the contract resulting in inappropriate interpretation and understanding. This situation was usually used by some parties to seek unfair opportunities from other parties to adjust contract documents [4]. In addition to this, many problems that occur during the bidding (tender) will have a serious impact on the implementation of the work, if these problems are not handled properly and another agreement cannot be reached between the assignor and the recipient of the task, then, of course, it will hamper the project, it can even be temporarily suspended. Thus, this research goal to identify the main problems related to contract documents during the bidding process. Besides, the data obtained can be analyzed to find solutions for construction business people, so that stakeholders can pay more attention to matters in planning, evaluation, and decision making during the bidding (tender).

## 2. Literature Study

Problems in the construction bidding are caused by many things, one of which is during the bidding process. Tenders that are not transparent and measurable will cause problems such as cost overruns, delays, quality, and others during the project period [5]. Often the selection of a contractor is based solely on the lowest bid price, this kind of approach will create problems during construction. Contractors usually submit very competitive costs and at below-average prices, they generally bid on the assumption of additional work, design changes, new requirements, environmental or physical constraints, making it possible to make new claims and recover substantial profit margins [6]. Thus, nowadays all projects construction are commended to be sustainable and zero waste [7,8,9,10]

### 2.1. The Bidding Process and Its Problems

According to previous research, the phase during the bidding is divided into two, the phase of preparation and implementation of the bidding. In each phase, there are 6 and 13 stages. As can be seen in **Table 1**, the first stage was planning of goods/service provider selection, then it was finalized by determining owner estimated [11].

**Table 1.** Stages in the bidding preparation phase [7]

Phase	Stages
Preparation	1 Planning of goods/service providers selection
	2 Selection of procurement system
	3 Determining method for qualification evaluations
	4 Determine the schedule for selecting goods/services provider
	5 Drawing out of goods and services procurement document
	6 Determining owner estimated

In the preparation phase, the most three problems occur including the preparation time was too short (during stage 4), incomplete documents due to minimal or incomplete specifications (during Stage 5), and

determining owner estimated without repeated review and bills of quantity does not match with the construction work drawing (during Stage 6). Then, as can be seen in **Table 2**, the implementation phase consists of thirteen stages. However, six stages of problems that often occur, including borrowing or using other company names (during Stage 2), aanwijzing (during Stage 3), evaluation of bids (during Stage 6), evaluation of qualifications (during Stage 7), verification of qualifications (during Stage 8), and regulations. Of these problems, it can be found that most occur during the bidding implementation phase, namely qualification. In general, bidders are unable to provide complete data such as personnel, completed work, previous project experience, and performance evaluation [11, 12].

**Table 2.** Stages in the bidding implementation phase [7]

Phase	Stage
Implementation	1 Announcement
	2 Registration and bidding documents obtaining
	3 Information session (aanwijzing)
	4 Bid documents submission
	5 Bid documents solicitation
	6 Bid evaluations
	7 Qualifications evaluation
	8 Qualification verification
	9 Preparing minutes of tender results
	10 Determining tender winner
	11 Award of announcement
	12 Disclaimer
	13 Refusal of appeal (if required)

### 3. Research Method

In this research, quantitative methods are used to collect the necessary data. Researchers will look for past and frequent problems at each process or stage in the bidding by using literature studies. Meanwhile, observations will be made on ongoing projects and find out how many problems occurred during the bidding. Also, questionnaires were distributed to professional experts according to their fields, this was to dig deeper and also find out the problems that often occur during the bidding and related to contract documents. The questionnaire will be distributed in the form of nineteen statements using a Likert scale to 40 respondents consisting of construction business people, both contractors, project owners, and *Quantity Surveyor (QS)* consultants. The results obtained will be analyzed and searched for an average using the *Relative Index (RI)* to determine the order of the main problems in understanding and making contract documents that most often occur at bidding. This RI number is shown from the value 0.2 to 1. Number 1 shows the highest level of agreement among the respondents, while 0.2 is the opposite.

### 4. Data Analysis and Discussion

Based on literature studies as well as field observations, several problems were found that occurred in the contract documents during the bidding process. After conducting an in-depth study of these problems, it can be concluded that there are three aspects of the problem, namely general, technical, or competence, and communication. General referred to in this case is related to the matters of writing, agreements, discussion of contract conditions regarding the duties and responsibilities of each party and the bidding process. Meanwhile, technical or competence is the ability to analyze, present, and understand something related to something technical following the field or the required specifications or standards. Finally, communication, this aspect leads to the explanation as well as clarification and questions about the project that is being bid.

In each of these aspects, some common problems are found. This problem directly or indirectly impacts the implementation process in the field. Several factors on the problem aspects can be seen directly in **Table 3**, including general, technical, along with communication.

**Table 3.** Factor in each Aspect of the Problem

No	Aspect	Factor
1	General	Document
2		Bidding Duration
3		Term / Language
4	Technical	Past Experience
5		Educational background
6		Planning
7		Specifications
8		Analysis
9	Communication	Explanation of Contract
10		Coordination

The calculation of the *Relative Index (RI)* was derived from the questionnaires. It has been distributed to respondents which will be carried out to determine the order of the main problems in the bidding process. By knowing the order, it can be concluded that the problem is dominant and occurs most frequently.

**Table 4.** Problems that often occur during the bidding process

No	Problems	RI
1	Unclear tender drawing	0.784
2	The bidding process is too fast	0.768
3	Incomplete or too general specifications (lack of detail)	0.768
4	Lack of detailed explanation regarding the contract conditions	0.768
5	Information received about field conditions is lack of detail	0.757
6	Lack of understanding of (standard) client requests	0.751
7	Too many clauses used	0.724
8	Lack of in-depth understanding of Drawing Plan	0.724
9	Incorrect price / volume calculation	0.719
10	Double Standard on Work Plan and Condition	0.714
11	Determining incorrectly the plan of supporting work tools	0.714
12	The document is too thick	0.708
13	Unfair contract conditions	0.708
14	The language used is difficult to understand	0.708
15	Incorrect work plan schedule	0.703
16	Poorly trained staff	0.703
17	Lack of communication between the assignee and the assignor or other parties	0.703
18	Failed to understand the document	0.676
19	Do not have experience handling the similar project	0.665

#### 4.1. General Problem

Most contract documents contain a variety of things from contract conditions to specifications. Regarding a large number of the document content, it affects the thickness of the document. Besides, the clause of contracts is too detailed and cannot represent the purpose being made. Then, it results in too many points and should be simplified. Not to mention that the bidding process is often quite short. This problem can be seen in **Table 4**, the highest problem in this questionnaire is unclear tender drawings (0.784) which followed by the bidding process time problem (0.768). These certainly have a relation to each other, unclear drawing is very critical on the quality of a document. The short time of the bidding process

impacted the contractor's unable to study the contents of the document, as well as to make more clarifications if there were questions. This finding meets the agreement with a study conducted by Laryea (2008) [10], it was found that four out of nine contractors failed to participate in the tender, one of which explained that the duration of the bidding was too short.

#### ***Technical Issues***

The problem factor that often occurs is competency or technicality rather than compiling and analyzing a contract document in every aspect of it. Many of the problems occur due to technical factors. One example that occurs is the process of understanding the drawing plans, many of the plans that are made cannot be applied directly during implementation. In this case, it is necessary for someone able or accustomed to handling and making implementation techniques, estimation plans in terms of materials, labors, and time. Often the contractor or assignee makes assumptions in the drawings that are unclear or lack detail. This of course will create new problems if the assumptions made are not as planned.

#### ***Work Plan and Condition***

Construction specification standards are urgently needed and must be continuously updated following applicable regulations. Problems on specifications or standards are also not lost on this bidding problems, it can be seen in **Table 5**, that the standards are incomplete and too general, or have not been updated when the bidding process is in progress, which is still a major problem (0.768). Surely, the provision of new standards and the completion of these standards will have an impact on costs, so this also needs special attention.

#### ***Implementation Planning***

As can be seen in **Table 4**, apart from problems that occur in quality standards, another problem encountered is a lack of detailed planning such as lack of in-depth understanding of drawing plan (0.724) and incorrectly determining the plan of supporting tools (0.714). In determining planning other than engineering, experience is also needed in reading bidding drawings, both from structures, architects, MEP & interiors. This is because, in development, these things are interrelated with one another. From reading the image correctly, it can be proceeded to plan the methods and workflows to be used. The tools (*equipment*) used must be determined in such a way, to match their designation, as the tool is the main supporting factor in the construction work process. Then, all planning must also be considered against the quality standards that have been set.

#### ***Bid Making and Submission***

After knowing the quality standards and carrying out work planning, price analysis can be carried out which can then be used as a basis for submitting bids along with the volume of work. Looking at **Table 4**, incorrect price or volume calculation still becomes a problem (0.719). Many contractors or assignees like to play on these calculations. This is because all types of work cannot be described in detail one by one. There is a dilemma that is often faced when making an offer, by adding a risk factor that causes the price proposed to be incompatible with the market, on the other hand, if a contractor charges a price below the market, the chances of winning a tender are much greater. Nowadays, the methods used are quite a lot to evaluate bids from contractors, the method of selecting which is based on the lowest bid price is certainly no longer relevant.

#### ***4.2. Communication Problems***

Communication between business people certainly greatly affects the clarity and performance of the projects to be handled. Several meetings to discuss or ask about information from the project are needed by the contractor and project owner. As can be seen in **Table 4**, communication is still a major problem in Indonesia, especially in explaining contract conditions and quality when information sessions (0.768 & 0.757). Problems usually arise from not keeping track of or lack of questions. This is because the duration of the bidding process is quite short to discuss the various conditions.

### **5. Conclusion**

The outcomes demonstrate that the problem factors can be divided into three, including general, technical, and communication. The dominant factor is the problem of unclear planning drawings (0.784), then the

short duration of the bidding to understand and make bids (0.768). Apart from this, unclear specifications or work plan terms and poor communication between various parties were also major problems in the contract documents, including 0.768 and 0.768, respectively. These problems should be able to be overcome by increasing the accuracy and readiness of the planning, and it is also necessary to lay the groundwork for contractual non-conformities. Besides, communication between various parties must be improved and discussed on every aspect or detail related to the project, or the contents of the contract document to avoid misperceptions. Several points or worst-case scenarios must be made a basis to avoid disputes between parties.

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