

# A Comparative Study between Clients and Contractors on Competitive Tendering in the Sudan Construction Industry

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## Abstract

Competitive tendering was one of the main procurement methods for construction projects in the 20th century. Due to the disadvantages such as impacts of design change, quality of final products etc., continuous application of this tendering method to construction projects has become quite arguable. This research has examined and compared clients' view and contractors' view on competitive tendering in the Sudan construction industry. Considering their opposite positions in relation to competitive tendering, clients and contractors have been compared. 16 comprehensive questions were asked. The outcome shows that there is virtually no difference between clients' view and contractors' view in competitive tendering. Therefore, competitive tendering may be still efficient and effective in the 21st century as both parties are well aware of the advantages and disadvantages. Further researches are required possibly in other countries to verify the findings of this research.

## Keywords

Competitive Tendering, Construction, Client, Contractor

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## 1. Introduction

Tendering is one of the important pre-construction stages that the client should pass through for any construction project to be initiated. Basically tendering is the client selection of the most suitable contractor from a group of contractors who are invited either in public or directly depending on the tendering method. The client will set a deadline for the contractors to submit their bids to be reviewed and evaluated by the team. The most commonly used tendering processes in the construction industry are competitive tendering and negotiation. The two processes have been used worldwide for the selection of contractors for construction projects. Competitive tendering is a method that allows the undoubted interests of all organizations in the construction industry. The data and docu-

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mentations used in competitive tendering are beneficial to those personnel in the construction industry who have contributed in estimating of construction projects or forecasting future trends [1]. Contrarily, negotiation is generally described as a means of communication between two parties (*i.e.* clients and contractors) and exchange of data and documents to conclude clients' decisions [2]. For the tender price of construction projects, clients and contractors have opposite positions to each other, together with their different roles and responsibilities. For example, an increase in tender price will possibly help contractors' profit and margin but be disadvantageous to clients' financial arrangements. Competitive tendering might be the start point of this unpleasant conflict between clients and contractors.

The objectives of this research are:

To investigate current practice of competitive tendering in the Sudan construction industry;

To compare clients' view and contractors' view on competitive tendering in the Sudan construction industry.

## 2. Literature Review

### 2.1 Competitive Tendering in the Construction Industry

Competitive tendering involves the client awarding the contract to a certain contractor after going through the process of bid evaluation from a group of contractors who have shown their interests in winning the contract. Selection of contractors relies on the submitted documents which provide detailed descriptions of the plan on how the project will be executed and the corresponding cost of the construction services. Clients will also look through each of the contractor's experience, financial status and their equipment [3] [4]. The most common tendering methods for construction projects are competitive tendering and negotiation. **Table 1** shows the differences between competitive tendering and negotiation.

Open tendering and selective tendering are two main competitive tendering methods. In open tendering, the tendering is advertised in local, national and international press. Project details together with the evaluation standards will be included in the advertisement and an invitation for all interested contractors to propose their bids. Selective tendering is a method of selecting tenderers and obtaining tenders by a limited number of contractors who are invited to tender. The tender list is made up of contractors who are considered suitable and able to carry out the work. This suitability is usually determined by pre-selection procedures. **Table 2** compares open tendering and selective tendering.

### 2.2. Advantages and Disadvantages of Competitive Tendering

These are several advantages and disadvantages of using competitive tendering for construction projects [5]-[8]: These are explained in detail. The advantages are:

#### 2.2.1. Tends to Improve Efficiency and Quality

One of the objectives of competitive tendering is to achieve most efficient and best quality service to the client with the lowest possible price in both public and private sectors. The rules of competitive tendering does not allow for negotiation with the client after bids submission. So this will encourage the bidders to come up with their optimum bids and to be creative in their technical proposals to the client in order to succeed and win the contract.

#### 2.2.2. Improvement of Contractor's Performances

Competitive tendering requires clients' inspection on the level of services based on the specifications and required level of quality. This generates competition and results in improving the contractor's performances in construction projects.

#### 2.2.3. Achieving the Best Value for Money

Competition is the one most effective ways in obtaining the best value for money. Competition motivates the contractors to provide the best services and to operate with their full capacities.

#### 2.2.4. Mitigating Corruption and Favoritism

Competitive tendering also creates transparency which leads to the reduction of favoritism and corruption. It also

**Table 1.** Competitive tendering versus negotiation.

Competitive Tendering	Negotiation
No discussion and deviation is allowed	Discussion is permissible as well as deviations
Less period of time is given for the contractors to study the project	Wide period of time is given for the contractors to study the project
Reduces risks to the client <i>i.e.</i> less cover priced bids	Promotes the use of cover prices
Expensive	Cheaper
Time consuming	Save time

**Table 2.** Open tendering versus selective tendering.

Open Tendering	Selective Tendering
High risk to the client	Less risk to the client
Develop contractors reputation	Less chance of improving contractors reputation
Reduces the use of cover price by contractors	Encourages the use of cover priced bids

ensures fair competition between tenderers.

However competitive tendering in the construction industry suffers from various disadvantages. These are:

### 2.2.5. Most of the Leading Contractors May Not Tender

Leading contractors are very demanded in the construction industry. They are extremely busy by committing to other projects to the extent that they might have a waiting list of clients. Competitive tendering cannot attract them.

### 2.2.6. Communication Is Restricted between the Client and the Contractor

In selection of contractors by competitive tendering, the only mean of communication between the client and the contractors is the bids. Rather there should be a specified period of time arranged by both parties to have a wide discussion about the designs and specifications in order to find out the necessary improvements.

### 2.2.7. Design Changes after Construction Starts, Results in High Cost

In competitive tendering, the confirmation of designs and specifications are done by the client. If the client discovers some changes to the design after construction starts, this consequently creates additional costs.

### 2.2.8. Use of Low Quality Materials and Labors

The contractor might find the use of poor quality material is the solution to keep the project cost unchanged and ensures the existence of profit while meeting the required specifications. This will eventually end up with a low quality product.

### 2.2.9. Advertisement and Contractors Selection Cost Is Expensive

In competitive tendering, the advertisement fees and tendering process costs are far higher than other methods of tendering such as selective tendering and negotiation.

## 2.3. Roles of Main Participants of Construction Project in Competitive Tendering

### 2.3.1. Client's Roles

Invitation or advertisement of the project to the contractors, promotion of the competition between them and final evaluation of their bids are all conducted by the client to find the most suitable contractor. However, the client can assign the selection of the contractor to a consultant engineer/designer or a project manager, relying on their expertise in this field. Advertisement of government projects can be done through several means such as local newspapers, online websites, journals like Engineering News and Records and other weekly or daily pub-

lications. In case of private projects (*i.e.* projects sponsored by a private client), typically the client restricts the process of advertising the project to a limited number of selected contractors. During the process of bids evaluation, the client should ensure that the contractors has submitted all the necessary documents, the contractor satisfies the qualification and experience requirements. Once the lowest bidder is selected then both the client and the contractor sign the contract documents.

### **2.3.2. Consultant Engineer/Designer' Roles**

The consultant engineers/designers are responsible for the design process and assisting the clients in formulating the tender and contract documents such as drawings, specifications, conditions of contract and other essential documents. One of the main tasks of the designers is to ensure that the structural design is compatible with the design brief, specifications, and statutory requirements.

### **2.3.3. Project Managers' Roles**

Project managers are responsible exclusively to the client and acts in the client's interests at every stage of the project. Project managers offer advice, uncoloured by any conflicting interest, on construction/project management.

### **2.3.4. Contractor's Roles**

Initially the contractors will come through the project's requirements, drawing, specifications and bill of quantity which are prepared by the clients for them to decide whether to bid or not. At this stage of tender, the bidders should be creative and accurate since the time period is limited and very little to negotiate with materials and equipment suppliers, labor rates and subcontractors. The contractor will look into the project from different angles to make the decision of whether to bid or not, based on the factors such as project type, project size, type of client, availability of resources, degree of competition, conditions of contract, current market conditions.

## **2.4. An Overview about the Sudan Construction Industry**

The Republic of Sudan is located in northeast Africa. Sudan was considered as the third biggest African country and the ninth in the world rankings in terms of area before the segregation of South Sudan. South Sudan became an autonomous government in 2005 and an independent country in 2011. Before the agreement was signed by the North and South government of Sudan in 2005, there was a long civil war between these two governments. During this civil war period, the economy of Sudan was so poor and consequently the construction industry was not much developed. Since the agreement in 2005, Sudan has experienced stability in the economic status and the government initiated to develop the country. The government used considerable amount of its expenditure in developing infrastructure in the capital city and other major cities. The infrastructure projects include highways, drainage systems and building constructions. Companies in the private sector also became very active particularly in housing renovations. This background of the Sudan construction industry justifies the needs of this research in competitive tendering.

## **3. Research Methodology**

A questionnaire was developed based on the literature review. To comprehensively investigate the Sudan construction industry, the questionnaire attempted to obtain the respondent's views on the advantages and disadvantages of competitive tendering as well as a comparison between both competitive tendering and negotiation. The questionnaire contained three sections with the following details:

- Section [A]: Respondent background such as roles, responsibilities, experience, education, public sector or private sector;
- Section [B]: To identify the strengths and weaknesses of competitive tendering, to compare competitive tendering and negotiation;
- Section [C]: Preferred methods of tendering and comments.

## **4. Findings of the Survey**

51 responses from the survey were received in the Sudan construction industry. The main questions in section B consist of 16 comprehensive questions related to competitive tendering for construction projects (**Table 3**). The

collected data have been analyzed by using SPSS (Statistical Package for Social Sciences).

The first step to be performed by SPSS analysis is to test the normality of the variables based on their significance values. The main purpose of this test was to know whether to use parametric or non-parametric tests. To apply parametric tests, homogeneity and normality of the variances should be shown. If the variable violated these conditions then the variable will be considered abnormally distributed and accordingly non parametric tests will be applied on it. **Table 4** shows results from Kolmogorov-Smirnov and Shapiro-Wilk test, indicating

**Table 3.** Descriptions of the questionnaire content.

Variables	Description
Q1	Tends to improve efficiency and quality of construction services to the clients due to the competition between contractors
Q2	Achieving the best value for money by considering the quality and suitability of the services to meet client's requirements
Q3	Reduces corruption and favoritism
Q4	Generates competition between contractors and thus helps in improving their performance in the industry
Q5	Promotes Collusion
Q6	Some of the leading contractors may not tender
Q7	Communication is restricted between the supplier (contractor) and the procurer (client)
Q8	In case of design bid build, design changes after the construction starts results in high cost and delays
Q9	Use of low quality materials and labors by contractors to obtain high profit
Q10	Advertising and selection cost is expensive
Q11	Competitive tendering promotes the submission of non-competitive bids by the contractors (bid shopping)
Q12	Negotiated contracts are less risky in terms of cost overrun and time delay
Q13	Changes are easily acceptable as long as the client agrees
Q14	Early involvement of the contractors in the projects
Q15	Can achieve cost savings
Q16	Can shorten total project duration

**Table 4.** Test of normality in SPSS for the independent variables.

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Q1	0.206	51	0.000	0.820	51	0.000
Q2	0.196	51	0.000	0.858	51	0.000
Q3	0.200	51	0.000	0.909	51	0.001
Q4	0.262	51	0.000	0.790	51	0.000
Q5	0.218	51	0.000	0.893	51	0.000
Q6	0.180	51	0.000	0.924	51	0.003
Q7	0.171	51	0.001	0.917	51	0.002
Q8	0.176	51	0.000	0.888	51	0.000
Q9	0.130	51	0.030	0.927	51	0.004
Q10	0.161	51	0.002	0.942	51	0.014
Q11	0.144	51	0.010	0.930	51	0.005
Q12	0.210	51	0.000	0.856	51	0.000
Q13	0.194	51	0.000	0.911	51	0.001
Q14	0.232	51	0.000	0.866	51	0.000
Q15	0.202	51	0.000	0.880	51	0.000
Q16	0.205	51	0.000	0.888	51	0.000

abnormal distributions of data. Therefore non-parametric tests are more appropriate to be used.

In this research the significance level of 0.05 has been used. So if the probability of a particular demographic factor is less than 0.05, then the null hypothesis is rejected and considered as being ‘statistically significant and unlikely happening due to chance’ (Table 5).

The survey participants comprise clients, project managers, consultants/designers and contractors/subcontractors. To make comparison between clients and contractors, these participants have been allocated into two groups-clients’ group (25 responses) and contractors’ group (26 responses). As project managers and consultants/designers work as clients’ representatives, they are included in clients’ group. Mann-Whitney is used in this research to examine and compare the two groups’ views. It can be concluded from the outcomes of the Mann-Whitney test that there is virtually no difference between clients’ group and contractors’ group in the views of the questionnaire except Q9 (Table 6). Therefore it can be concluded that even though the role/responsibilities and positions in relation to tender price are different between clients and contractors, their views on competitive tendering arte almost the same.

## 5. Conclusion

This research investigated and compared clients’ view and contractors’ view on competitive tendering in the Sudan construction industry. Despite their opposite positions in respect of tender price and different roles/responsibilities, clients and contractors have almost the same view on the main aspects of competitive tendering. The questionnaire consists of comprehensive points of competitive tendering from various angles. Even though

**Table 5.** Significance Level.

Significance Level	Null Hypothesis	Interpretation
$P \leq 0.05$	Rejected	Statistically significant & unlikely happening due to chance
$P > 0.05$	Not rejected	Not statistically significant & likely happening due to chance

**Table 6.** Test statistics of Mann-Whitney test (Clients’ Group vs. Contractors’ Group B).

	Mann-Whitney U	Wilcoxon W	Asymp. Sig.
Q1	321.0	646.0	0.938
Q2	277.0	628.0	0.351
Q3	304.0	655.0	0.686
Q4	325.0	676.0	1.000
Q5	311.0	662.0	0.787
Q6	304.0	655.0	0.686
Q7	309.5	660.5	0.767
Q8	314.0	639.0	0.832
Q9	157.5	482.5	<b>0.001</b>
Q10	317.0	668.0	0.878
Q11	277.5	628.5	0.363
Q12	283.0	634.0	0.420
Q13	325.0	676.0	1.000
Q14	280.5	605.5	0.389
Q15	228.0	579.0	0.061
Q16	323.5	674.5	0.977

competitive tendering has some disadvantages, it seems that this tendering method can still be efficient and effective to be used in the 21st century, as both parties are well aware of the advantages and disadvantages. Future research will be conducted in other countries to verify the finding of this research.

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