

COMPETITIVE TENDERING FOR CONSTRUCTION PROJECTS IN SUDANB. G. Kang^{1*}, M. M. M. E. Elbashier¹, L. Tang², R. Jin² and S. Tang²

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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 impact 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. A total of 16 comprehensive questions were asked. The outcome shows that there is virtually no difference between clients' view and contractors' view in competitive tendering. The causes of this similarity have been investigated through interviews. The main cause is that both parties are well aware of the advantages and disadvantages of competitive tendering process. To fully evaluate whether competitive tendering will be still efficient and effective in the 21st century in the global construction industry, further researches are required.

Keywords: Competitive Tendering; Construction; Client; Contractor

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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 were 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 documentations 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 mean 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 compare clients' view and contractors' view on competitive tendering in the Sudan construction industry.

To identify the causes of similarities and/or differences between clients' view and contractors' view

LITERATURE REVIEW

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]. Competitive tendering is compared with negotiation in Table 1.

Table 1. Competitive Tendering Versus Negotiation [2, 5]

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.e. less cover priced bids	Promotes the use of cover prices.
Expensive	Cheaper
Time Consuming	Save time

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.

Table 2. Open Tendering versus Selective Tendering [2, 6]

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

An overview on 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.

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

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).

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
Q60	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

The first step 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. Results from Kolmogorov-Smirnov and Shapiro-Wilk test, showed 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'. 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 4). 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 are almost the same.

Table 4. Test statistics of Mann-Whitney test (Clients' Group vs Contractors' Group)

	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	0.001
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

FINDINGS OF THE INTERVIEWS

Interviews have been conducted to identify the causes of the results of the questionnaire survey. Interviewees were asked to provide the reasons why Clients' Group and Contractors' Group have similar views even though their roles and responsibilities are quite different in competitive tendering. The following are the outcomes of the interviews.

Table 5. Outcomes of Interviews

Interviewee	Comments
One	<p>Both the Client and the Contractor are trying to achieve project objectives.</p> <p>Both are trying to push for effective allocation and use of resources including manpower to meet project dead line.</p> <p>Client is usually assisting the contractor and facilitating communications with authorities</p> <p>Culture and attitude of developer of construction industry in the country i.e. to get future job opportunities and to avoid liquidated damages, the Contractor has to satisfy the Client by meeting the deadline.</p>
Two	<p>In competitive tendering both client and contractor will look forward to satisfy all parties involved in the project for the sake of time saving. So if both of them do not agree, then they cannot progress with their project and they will end up with disputes.</p>
Three	<p>Transparency is provided between the contractor and client.</p> <p>Building good relationship between each other to overcome problems and to make changes when necessary to meet the project requirements.</p>
Four	<p>Contractors and clients have different agendas; the contractors tend to finish the project with lowest possible cost to earn high profit, while the clients are more concerned with obtaining high quality and safety, so based on this fact the interviewee Four thinks that the outcomes were quite strange.</p>
Five	<p>Interviewee Five showed the same views as Interviewee Four.</p>

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. Interviews showed that the main cause of

this similarity is based on the fact that both clients and contractors understand this tendering process very well. However there were opposite views on the similarity. Further researches will be required to deduce the causes of the similarities and establish more reliable relationships between them.

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