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Impact of Contractors' Bidding Strategies on Bid Success in the Nigeria Construction Industry

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ABSTRACT

Several types of researches have been carried out prior to the new millennium on the subject of bidding strategies in the construction industry. Today, organizations are faced with a very complex decision of bid/no-bid because it requires the assessment of large number of highly inter-related variables. The study aims at examining different types of Contractors' Bidding Strategies (CBS) with a view to determining their impact on bid success. In line with the aim, the study objectives include; evaluation of different types of CBS and; assessment of the success rate of contractors' bid. The method of approach elicits information on the number of projects bided and successes recorded over a period of time. A total of one hundred and seventy-one useable responses were retrieved from questionnaire administration. Descriptive statistics, tables and percentages as well as mean item score (MIS) were used for data analysis. The study showed that lowest bid, public relations and joint venture bidding strategies have great impact on contractors' bid success especially on residential, educational and administrative projects in the Nigeria Construction Industry (NCI). Therefore, the study concluded that relationship exists between contractors' bidding strategies and equivalent successes recorded over a period of time. It is important to also know that lowest bid strategy still remains the most effective bidding strategy for public works contracting in the NCI.

1. Introduction

Contracts are usually awarded through the process of bidding in the construction industry and contractor's goal in developing a bidding strategy is to win a bid award. Bagies and Fortune (2006) stated that smart contractors realize the importance of doing initial research and project evaluation before committing themselves to a construction project. Undergoing initial research before bidding proper help contractors' maintain fee schedules at a level that will support and ultimately assist in running a profitable and high quality business that best serves the need of clients who rely on their products and services.

Contract bidding is a well-established mechanism for achieving distribution of work to willing contractors and is concerned with contractors making strategic decisions. The decision-making at this stage according to Bagies and Fortune (2006) is accomplished by two related decisions i.e., bid/no bid decisions that consider factors that would help contractors to determine the appropriate bidding strategy and the benefit expected from a particular project and secondly, mark-up decision, which is one of the consequences of the bidding strategy.

Bidding generally involves a very complex decision requiring simultaneous assessment of large number of highly inter-related variables to arrive at a decision (Chua et al., 2001). General construction contractors develop bidding strategies to guide them in determining what jobs to bid and how to bid for those jobs. Oo et al. (2010) stated that bidding strategies varies from contractor to contractor, each of which will have different degrees of sensitivity towards the factors affecting their bidding decisions. Competitive bidding is widely applied in many sectors of the economy beside the construction industry, and as a form of strategy, it can be reflected in two ways; open or sealed bidding and a combination of the two according to McCaffer and Harris (2001).

Tan et al. (2008) noted that the development of the construction industry has led to an increase in the number of criteria imposed by project clients for selecting contractors. The trend has attracted research interest in devising various methods for helping project clients to assess contractors' bids. For example, clients often request tenderers to satisfy various conditions such as a tight program, financial strength, management ability, relevant work experiences, technical strength, high workmanship standards and safety requirements (Flanagan et al., 2007; Lu, 2006). Contractors must be able to show competence in different types of bidding strategies (such as lowest bid strategy, joint venture, public relations, selective bidding, negotiated work etc.), in order to meet with various criteria imposed on them by the clients.

Hence, this study aims at identifying and assessing different types of contractors' bidding strategies with a view to determining their impact on bid success. To achieve the aim, the study objectives evaluated different types of contractors' bidding strategies adopted in the NCI and also assessed the success rate of contractors' bid. To win a bid award, contractors need to strategize, hence the need for a bidding

strategy. While developing bidding strategies that would compete favourably for a bid award, contractors need to authenticate the feasibility and viability of construction works before channeling all resources into it. This in essence would help contractors perform better since they are well informed on the bidding processes.

2 Contractors' Bidding Strategies

Bidding strategy is one of the important strategies in the early stages of project life cycle to determine project success. It is a management skill that makes use of all available resources in order to offer a comprehensive and competitive bidding while considering various aspects, including internal, external and environment, with aim to win the bidding competition, and provide maximum project performance. In effect a bidding strategy is the decision by a company on which work to price for and the level of profit to incorporate in order to successfully secure the project and maintain the businesses financial security.

Bidding strategy in construction comprises a number of decisions to be made including whether to bid or not bid; the level of mark-up to be adopted. If the decision is to bid and be successful on the bidding strategy, it is necessary to bid high enough to ensure getting profit on each job and low enough to get job (Chua and Li, 2000). Various research works have been carried out on the subject of competition strategies in the construction market. Friedman (1956) cited in Tan et al. (2008) argued several possible objectives a bidder may wish to achieve and for which different competition strategies are developed. The objectives include; maximizing total expected profit, gaining at least a certain percentage of investment, minimizing expected losses, minimizing the profits of competitors, keeping production going.

Cooke and Williams (2015) highlighted some benefits of a bidding strategy which includes; determining the chances of getting a job by bidding with any given markup; identifying the markup that will result in the greatest possible profit on a specific job in view of the prevailing competitive situation surrounding that job; select from a number of different projects, the jobs offering the greatest profit potential and; decide whether a particular job offers sufficient profit potential to justify submitting a bid at all. Furthermore, Cooke and Williams (2004) evaluated some key factors influencing contractor's decision to bid and these include; current workload, sufficient working capital, availability of resources, location of project, size and type of project etc.

Boughton (1987) cited in Barr (1990) found in his survey (with useable responses from 126 general construction contractors from around the United States) that the factors in developing a bidding strategy are clearness and detail of specifications, past experience with similar work, confidence in subcontractor bid and location of project. Furthermore in a descending order are number of competitors, duration of project, workload, market condition and size of bid. Others are opportunity for follow-on work, relationship with the owner; competitors bid history and confidence in external events (interest rates, inflation etc). Boughton concluded from this survey that the general construction contractor's number one concern about a prospective job is how well he will be able to control the construction process. However, the market conditions play a substantial role in the development of a contractor's bidding strategy.

2.1 Types of Contractors' Bidding Strategies

The Hong Kong study on an examination of the factors affecting contractor's competition strategy by Tan et al. (2008) identified five types of competition strategies particular to the area of study. They include lower bid strategy, joint venture, public relations, risk control and claim strategy. Also, in the study of Emily (2013) on construction bidding strategies, three types of bidding strategies identified are quantity bidding, selective bidding and negotiated work. They are discussed as follows.

Lowest Bid Strategy: By adopting a lower bid strategy, the contractor will offer a much lower bidding price than other competitors in order to increase the chance of winning the contract. On the other hand, it should be noted that the adoption of this strategy is in sacrifice of the contractor's profit margin.

Joint Venture Strategy: Adopting a joint venture strategy to compete in the construction market means that several contractors form a joint organization to tender for a contract. Since the construction projects are becoming more complex and risky, there is increasing demand for contractors with diverse strengths and weaknesses to form joint ventures to collectively bid for projects (Kumaraswamy et al., 2000).

Public Relations Strategy: Public relations are the practice of managing the communication between an organization and other stakeholders in the construction market. The public relations strategy is used to help contractors in communicating effectively and positively to the public, clients and consultants. The communication can be in different ways, such as attending conferences, winning industry awards or establishing long-term cooperation with clients. The strategy will help improve the contractor's image, thus increasing the chances of winning in competitions in the market.

Risk Control Strategy: Risk control means to assess and manage risks related to a project. Contractors can demonstrate that they have the best skill in risk control if they adopt the proper strategy. Thus they can gain better credits from clients. The risk control strategy includes avoiding the risk, reducing the effect of the risk, transferring the risk to other parties, or accepting the consequences of a particular risk.

Claims Strategy: The claim strategy is used when the expectation is that there are potential changes in the design of a project, or there are uncertainties existing in the project which may lead to claims in the future. The adoption of this strategy depends on the characteristics of the project. For example, a small project with a detailed design is not appropriate for selecting this strategy, but a large complex project without a detailed design may be a good choice for implementing this strategy.

Quantity Bidding Strategy: The most widely used bidding strategy for many contractors is to simply bid on every job that comes along. This high-volume approach is based on the belief that putting out a large quantity of bids means that you will usually win at least a certain percentage of them. This strategy is very time consuming and usually results in low profit margins. The bidding-by-volume approach is most effective for newer companies with little name recognition in the industry that has trouble landing work. It may also be a good strategy for companies struggling to find work, or those that have a large number of employees who are not busy with current projects.

Selective Bidding Strategy: A more effective strategy is to carefully evaluate bid opportunities based on quality, and to pass on bids that are not a good match for the company. This allows estimators to take their time on each bid and refine their price, which usually results in more

successful bids. To utilize this strategy, a contractor considers the type of work the company is most successful at. This may be a specific project type, like hospitals or schools, or a certain size range of jobs. Once an appropriate bid opportunity has been found, time is therefore taken to produce an accurate estimate and obtain material prices from suppliers. Evaluate the plans and schedule to see how you could perform the job efficiently. This will allow you to keep your bid low and improve your chances of landing the job.

Negotiated Work Strategy: Most bids for government work or municipal agencies are sealed bids. This means that prices are submitted and the lowest qualified bidder gets the job. There is no room for negotiation or bid modification. In open bid, prices are submitted to the owner who can base his selection on a wide range of criteria. There is no legal obligation to give the contract to the lowest bidder. In negotiated job type, relying on networking and personal relationships helps contractor land a work. This involves carefully preparing bids and staying in contact with the owner/client as much as possible throughout the process. Performing to the highest standards is therefore very important once a contractor lands a work. This will often lead the owner to awarding additional work through a negotiation process, rather than a bid. Negotiated work often comes with higher profit margins and fewer communication problems.

3 Research Methodology

Three states were selected base on convenience for the purpose of this study; i.e., Ondo – oil producing state and Lagos and Osun – non-oil producing states in the Southwest Geo-political zone of Nigeria. The total number of registered contractors domiciled in each state was physically sought for and obtained from the office of the supervising authority on public procurement, the Bureau of Public Procurement (BPP). Base on contractors' due registration with Corporate Affairs Commission (CAC), current tax payment and value of work to bid for, two hundred and thirty-seven were randomly selected and provided questionnaire but one hundred and seventy-one useable responses were retrieved indicating 72% response rate. Ling and Liu (2005), Oo et al. (2008) and Tan et al. (2008) are of the opinion that contractors are often secretive about their bidding activities. However, Tan et al further stated that the normal research survey rate in the local construction industry is between 10% and 20%. Therefore, 72% response rate was adjudged reasonable, high and representative. A pilot survey carried out on the subject under discussion initially revealed contractors have the knowledge of different types of bidding strategies thereby giving rise to the responses as discussed.

The study objectives evaluated different types of contractors' bidding strategies adopted in the NCI and also assessed the success rate of contractors' bid. To this end, the questionnaire obtained information from the contractors' on their experience on bidding processes, understanding of different types of bidding strategies, number of projects bided for and successes recorded over ten year period 2005-2014 were requested for. Five-point Likert scale, which are (1) Extremely Not Important (2) Not Important (3) Either not important nor important (4) Important and (5) Extremely important, were adopted to prepare a closed-ended questionnaire. This was preferred most as opined by Akintoye and Main (2007) in order to reduce the level of bias and to facilitate coding. Descriptive statistics, tables and percentages as well as mean item score (MIS) were used for data analysis.

4 Findings and Discussion

4.1 Awareness on the types of contractors' bidding strategies

Table 1 presents responses from the survey carried out among contractors in three different states (Lagos, Ondo and Osun). The contractors showed awareness on the types of bidding strategies. On the overall, 28.7% of the contractors showed they are aware of lowest bid strategy while 21.6% and 15.8% are aware of public relations and joint venture bidding strategies respectively. The analysis revealed that lowest bid strategy top the awareness list among all the strategies in the three states while some level of awareness was also revealed on other types. Offering low bids according to Tan et al. (2010) will reduce contractors' profits and potentially make development less attractive. Contractors need to understand their specific resources that generate competitive advantage and accordingly develop strategies to win contracts.

4.2 Frequency of Use of Contractors' Bidding Strategies

Presented in Table 2 is the MIS of the frequency of use of contractors' bidding strategies. The result shows that public relations strategy (MIS=4.45) is the most frequently used bidding strategy. A pilot survey revealed the situation of the construction market in Nigeria

Table 1 *Awareness on the types of Contractor's Bidding Strategies*

Bidding Strategies	Overall		Lagos State		Ondo State		Osun State	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Lowest Bid Strategy	49	28.7	21	30.9	12	28.6	16	26.2
Public Relations Strategy	37	21.6	16	23.5	9	21.4	12	19.7
Joint Venture (Consortium) Strategy	27	15.8	12	17.6	6	14.3	9	14.8
Quantity (Mass) Bidding Strategy	20	11.7	5	7.4	6	14.3	9	14.8
Negotiated (Bargained) Works Strategy	18	10.5	5	7.4	5	11.9	8	13.1
Selective (Choosy) Bid Strategy	9	5.3	4	5.9	2	4.8	3	4.9
Risk (Loss & Hazard) Control Strategy	5	2.9	3	4.4	0	0	2	3.3
Claims Strategy	6	3.5	2	2.9	2	4.8	2	3.3
Total	171	100	68	100	42	100	61	100

Table 2 *Mean Item Score (MIS) of frequency of use of Contractor's Bidding Strategies*

Contractors' Bidding Strategies	Overall		Lagos State		Ondo State		Osun State	
	MIS	Rank	MIS	Rank	MIS	Rank	MIS	Rank
Public Relations Strategy	4.45	1	4.44	2	4.39	1	4.53	2
Lowest Bid Strategy	4.41	2	4.50	1	3.72	5	5.00	1
Joint Venture (Consortium) Strategy	4.18	3	3.98	4	4.28	2	4.27	4
Risk (Loss & Hazard) Control Strategy	4.02	4	4.20	3	3.90	3	3.95	5
Quantity Bidding Strategy	3.55	5	3.50	5	3.86	4	3.29	6
Claims Strategy	3.36	6	3.33	6	2.47	7	4.29	3
Negotiated Works Strategy	3.28	7	3.29	7	3.63	6	2.91	8
Selective (Choosy) Bid Strategy	2.91	8	3.23	8	2.29	8	3.22	7

construction industry to which this finding agrees with. Contractors bidding for public works always look forward to securing bid awards by creating external relationship with clients outside the normal relationship brought about by the contract. This was found to frustrate the purpose of public procurement meant for transparency. On the contrary, Tan *et al.* (2008) emphasized the intention of public relations strategy which was meant to help contractors communicate effectively and positively to the public, clients and to consultants and this could be in different ways; attending conferences, winning industry awards and establishing long-term cooperation with clients.

4.3 Effectiveness of Contractors' Bidding Strategies

Table 3 presents the MIS values and rankings of the effectiveness of contractors' bidding strategies. Findings revealed public relations strategy with MIS values of 4.54 and 4.59 as the most effective bidding strategy in Lagos and Osun state – non-oil producing states. However, lowest bid strategy with MIS value of 4.41 is the most effective in Ondo state. Average Mean Item Score (MIS) of the three states further indicated lowest bid strategy as the most effective in the Nigerian construction industry with average MIS value of 4.46. This is followed by public relations strategy with average MIS value of 4.42 and selective (choosy) bid strategy with an average MIS value of 4.09. There is no doubt that lowest bidder gets an award for contracts bided for in the construction industry and this explains why it is still the most effectively adopted strategy. According to Shen et al. (2006) and Tan et al. (2008), evaluation of contractors has continued to emphasize on tender price with less attention on contractor's performance attributes.

4.4 Contractors' Bid Success

In order to determine the success rate of construction firms', different types of construction works were considered. Table 4 shows the responses of the contractors' on different types of construction works. The contractors provided the number of projects bided for and number of projects won for a period of ten years. Thereafter, bid success rate for the projects were determined according to the responses provided by the contractors'. The results indicated that majority of the contractors have recorded more than 70% success on residential type of project over this period. Also, contractors in Ondo and Osun states respectively have recorded minimum of 80% success on educational facilities than contractors in Lagos state. However, about 80% of successes recorded on administrative facilities are from contractors in Lagos state. This result is therefore indicative of a mature organization with established strategy and tactics as stated by Wolstencroft (2014) that, success rates of a minimum of 50% is decent and success rates of 70% or more are indicative of a mature organization with an established strategy and tactics used when bidding for construction works. A low win rate should therefore lead a contractor to examine strategic alignment and timing of bids. Base on the pilot survey, the findings indicate that lowest bid strategy had an impact on the success of bids for construction works.

5 Conclusions and Recommendations

Results have shown that contractors in the Nigeria construction industry are aware of the different types of bidding strategies across the

Table 3 *Mean Item Score (MIS) of the effectiveness of Contractor's Bidding Strategies*

Contractors' bidding strategies	Overall		Lagos State		Ondo State		Osun State	
	MIS	Rank	MIS	Rank	MIS	Rank	MIS	Rank
Lowest Bid Strategy	4.46	1	4.48	2	4.41	1	4.48	2
Public Relations Strategy	4.42	2	4.54	1	4.14	4	4.59	1
Joint Venture (Consortium) Strategy	4.09	3	4.36	3	4.20	3	3.70	6
Selective (Choosy) Bid Strategy	4.03	4	3.91	5	4.14	4	4.03	4
Negotiated Works Strategy	4.02	5	3.92	4	3.75	5	4.38	3
Quantity Bidding Strategy	3.85	6	3.23	7	4.33	2	4.00	5
Claims Strategy	3.75	7	3.83	6	3.75	5	3.67	7
Risk (Loss & Hazard) Control Strategy	3.01	8	2.67	8	2.86	6	3.50	8

Table 4 *Bid success rate of construction firms*

Construction Works	Lagos State	Ondo State	Osun State
Residential facilities (housing, hostels)	97%	85%	78%
Administrative facilities (offices, law courts)	79%	71%	53%
Educational facilities (laboratory, classrooms, library)	64%	83%	88%
Religious facilities (temples, churches, mosques)	53%	56%	20%
Health facilities (hospitals, clinics)	47%	6%	17%
Industrial facilities (factories)	40%	-	-
Common facilities (toilets, storages)	20%	49%	83%
Recreational facilities (stadium, parks)	17%	-	-

states selected for the purpose of this research. Public relations strategy has been adopted more frequently by contractors in Ondo state as against its adoption in Lagos and Osun state. This result from Ondo was expected being an oil-producing state where contractors want to land project award and execution. It was also concluded that lowest bid strategy was adjudged the most effective when bidding for construction projects in the public sector.

However, to be successful in bids, contractors are encouraged to be project specific and not bid base on quantity as this would lead to poor output and wasted effort. This was revealed from the percentage of successes recorded residential, administrative and educational facilities in the selected states respectively.

Considering the impact of these bidding strategies on bid success, construction industry in its competitiveness require contractors' to be smart with their bidding activities. The adoption of public relations strategy should function in advertising the construction firm in order to foster a long lasting relationship with the client. The decision on a particular strategy lies mostly on the top management and the technical department of an organization, and in order to be successful, contractors' must device means to out-run other competitors. Hence, the need for contractor's bidding strategy in the construction industry.

References

Akintoye, A and Main, J (2007) Collaborative relationships in construction: The UK contractors' perception. Engineering, Construction and Architectural Management, 14(6), 597-617.

Bagies, A. and Fortune, C. (2006). Bid/no-bid decision modelling for construction projects, In: Boyd, D (Ed) Procs 22nd Annual Association of Researchers in Construction Management (ARCOM) Conference, Birmingham, UK, pp. 511-521.

Barr, R.S. (1990). General construction contractor bidding strategy variations based on market conditions. A Special Research Problem Presented to the Faculty of the School of Civil Engineering Georgia Institute of Technology In Partial Fulfilment of the Requirements for the Degree of Master of Science in Civil Engineering.

Cooke, B. and Williams, P. (2015). Construction Planning, Programming and Control: Bidding strategy of construction companies. Construction Essay, Published on 23, March.

Cooke, B. and Williams, P. (2004). Construction Planning, Programming and Control. Construction Essay Publication.

Chua, D. K. H. and Li, D. (2000). 'Key factors in bidding reasoning model', Journal of Construction Engineering and Management (ASCE), Vol. 126, No. 5, pp. 349-357.

Chua, D.K.H., Li, D.Z. and Chan, W.T. (2001). Case-based reasoning approach in bid decision making. Journal of Construction Engineering and Management, 127(1), pp. 35-45.

Emily, B. (2013). Construction Bidding Strategies, www.google.com, accessed on 5th May, 2013.

Flanagan, R., Lu, W., Shen, L. and Jewell, C. (2007). Competitiveness in construction: a critical review of research', Construction Management and Economics, 25, pp. 989–1000.

Friedman, L. (1956). A competitive bidding strategy. Operational Research, 4, pp. 104–112.

Kumaraswamy, M. M., Palaneeswaran, E. and Humphreys, P. (2000). Selection matters – In construction supply chain optimisation, International Journal of Physical Distributions and Logistics Management, Vol. 30, No. 7-8, pp. 661-680.

Ling, F. Y. Y and Liu, M. (2005). Factors considered by successful and profitable contractors in mark-up size decision in Singapore', Building and Environment, Vol. 40, No. 11, pp. 1557–1565.

Lu, W.S. (2006). A system for assessing and communicating contractors' competitiveness. Thesis submitted for the Degree of Doctor of Philosophy in the Department of Building and Real Estate, the Hong Kong Polytechnic University, Hong Kong.

McCaffer, R. and Harris, F. (2001). Modern Construction Management. 5th Edition. Blackwell Science Ltd, 2001.

Oo, B.L., Drew, D.S. and Lo, H.P. (2008). A Comparison of Contractors' Decision to bid behaviour according to different market environment. International Journal of Project Management, 28, pp. 439-447.

Shen, L.Y., Lu, W.S. and Yam, C.H.M. (2006). Contractor key competitiveness indicators (KCIs): a China study.' Journal of Construction Engineering and Management, 132(4), pp. 416-424.

Shen, L.Y., Lu, W.S., Shen, Q.P. and Li, H. (2003). A computer-aided decision support system for assessing a contractor's competitiveness.' Automation in Construction, 12(5), pp. 577-587.

Tan, Y., Shen, L., and Langston, C. (2010). Contractors' Competition Strategies in Bidding: Hong Kong Study, Journal of Construction Engineering and Management, Vol. 136, No. 10, pp. 1069–1077.

Tan, Y.T., Shen, L.Y., Khalid., A.G. and Song, S.C. (2008). 'An examination of the factors affecting contractors' competition strategy: a Hong Kong study.' International Journal of Project Organisation and Management, 1(1), pp. 4-23.

Wanous, M., Boussabaine, A.H. and Lewis, J. (1998). Tendering factors considered by Syrian contractors.' In: Proceedings of the 14th annual ARCOM conference, 2, pp. 535.

Wanous, M., Boussabaine, A.H. and Lewis, J. (2000b). A neural network bid/no bid model: the case for contractors in Syria. Construction Management and Economics, 21, pp. 737-744.

Wolstencroft, L. (2014). Success: How to bid, How to win. Accessed at http://www.aerospacebizdev.com/Bid_and_Win_reprint%5B2%5D.pdf. Retrieved on 8th December, 2014.