

# AN EVALUATION OF FACTORS AFFECTING THE SELECTION OF BUILDING CONTRACTORS: THE CASE OF NIGERIA.

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## **ABSTRACT**

This paper is concerned with identifying the importance of the pre-qualification factors used in selecting contractors and also in determining the importance of various criteria used for the award of contract. The study was carried out through questionnaire survey administered to a population of 60 respondents in consultancy and client's organisation. The data analysis included a statistical comparison of means and interpretation. The result of this study showed that experience of the contractor is the most important pre-qualification factor while technical expertise is the most important criteria in the award of contract. The result of this study will enable clients, consultants and contractors to lay emphasis on the influencing factors in terms of pre-qualification and award of contract.

**Keywords:** Building contractors, evaluation, factors, selection, Nigeria.

## **1. Introduction**

Kwakye (1997) opined that the selection of a contractor for the construction of a project is one of the crucial decisions in client's development ambitions. Ill-conceived decisions regarding this will impair the client's development gains. Often this task is challenging, because the construction industry is volatile and competitive (Fong et al, 2000). Kangari and Bakheet (1994) agrees that the probability of construction failure is quite high for individual contractors and it is important for the project owners to confront and manage these risks if they wish to achieve good project results. All procurers have the same goals. All want a project more or less at a reasonable cost, to a reasonable quality and within a reasonable time (Masterman, 1994). The tendering system aims to achieve this goal by ensuring the simultaneous selection of an appropriate contractor to deliver the project, the mechanism for delivery, the price to pay and the legal framework. The only difference then between procurers is in the strategic choice of process elements. It is expected therefore that the criteria involved will be consistent across all procurers, with only the emphasis changing between procurers and projects according to the strategies employed (Russel et al, 1988). In this paper, we are concerned with identifying the importance of the pre-qualification factors used in selecting contractors and also in determining the importance of various criteria used for award of contract.

## 2. Pre-qualification and Bid Evaluation Criteria

Pre-qualification is a pre-tender process used to investigate and assess the capabilities of contractors to carry out a contract satisfactorily if it is awarded to them, and has been examined by several researchers (e.g. Ng, 1992; Holt et al, 1994; Potter and Sanvido, 1994, Merna and Smith, 1990; Skitmore et al, 1997). It provides a client with a standing list of potential contractors to invite to tender for similar types of project on a regular basis, or just a project list of contractors to be invited to tender for a specific project. Bid evaluation, on the other hand, involves similar processes but occurs at post-tender stage, and involves the consideration of the bid amount in addition to the contractors' capabilities.

Contractor pre-qualification and bid evaluation are therefore decision-making processes that occur within the overall procurement strategy. They involve the development and consideration of a wide range of necessary and sufficient decision criteria as well as participation of many decision-making parties (Russel et al, 1988).

Pre-qualification and bid evaluation procedures are currently used in many countries, and involve many different types of criterion to evaluate the overall suitability of contractors. These are said to include:

1. General, technical, management and financial criteria
2. Financial stability, managerial capability and organisational strength, technical expertise and experience of comparable construction (Merna and Smith, 1990).
3. Relevance of experience, size of firm and safety records (Moselhi and Martinelli, 1990).

According to Brook (2001) in the design of a pre-qualification system for publicly bid construction services, the following elements should be included and considered to be fair and objective measure of the applicant's qualifications:

- i. **Experience:** The contractors direct or relevant previous experience in completing similar work should be considered
- ii. **Resources:** The amount of resources the project will require compared to the total resources has available should be considered. Resources include: financial, manpower, list of management personnel, backup management personnel, resumes, key personnel lists, equipments, bonding and insurance capacity, information/communication system used and the capacity to complete the work.
- iii. **Litigation:** The past and current history of the company's record of litigation, claims and conflict resolution should be considered.

The building contractor consumes all the criteria above and will use it to establish their willingness and interest to pre-qualify and participate on such projects.

The essence of pre-qualification is to separate the wheat from the chaff and to establish a cream of the best from the ocean of bad, good, better and best.

### **Why pre-qualification in the first place?**

Clients are becoming more complex, more knowledgeable and more cost conscious in the face of intense competition and dwindling resources and so also their requirements are becoming more complex, more complicated and more costly. It is therefore imperative that complicated system should also be adopted to deal with complex situation.

Just as the clients and complex, contractors too are becoming complex, complicated and technologically driven. According to Robertson (2001), pre-qualification is adopted where the client is more concern about quality, cost and time of delivery.

Other factors warranting pre-qualification adoption may be highlighted as follows:

- a. To enable critical and functional evaluation of contractors.
- b. To weed potential contractors to a manageable level.
- c. To establish capable contractors in terms of track record, financial situation and competency.
- d. To establish technological competence and readiness of the contractor in relation to the technological requirements of the project.
- e. To establish capability of contractors especially where performance specification is to be adopted.

Hancher (1985) stated that by this exercise, the client is trying to establish the bidders standing in the market place. Bidders standing in the market place deal with capability, efficiency, experience, financial standing, technological readiness, logistics, quality of personnel, quality and quantity of available plants, equipment and volume of work at hand. Further to this, Moselhi et al (1990) in consultation with the industry, found the selection criteria considered for bid evaluation to be:

1. bid amount
2. annual life cycle cost
3. number of years in business
4. volume of business
5. financial credit
6. previous performance
7. project management organisation
8. technical expertise
9. time of execution
10. relationship with subcontractors

The assessment of contractors who have previously qualified can, of course, be assisted by reference to previous pre-qualification records. In total, the information used for the assessment of criteria for pre-qualification and bid evaluation falls into five groups: administrative purposes, financial information, technical information, managerial information and safety information.

### **3. Data Collection and Analysis**

The study was carried out through questionnaire survey. The questionnaire contained ten items which include: name of client, location of organisation, length of service of the respondent, designation of the respondents, academic qualification of the respondents, professionals' qualification of the respondents, frequency of using tendering methods and documents, importance of pre-qualification factors, importance of criteria for award of contract. The respondents were given 16 top pre-qualification factors and 9 criteria for award of contract. The respondents were asked to assess the importance of these variables in pre-qualification of contractors as well as in bid evaluation on a 5-point Likert scale of 1 for "not important", 2 for "of little importance", 3 for "somewhat important", 4 for "important", and 5 for "very important". Statistical analyses were undertaken using the Statistical Package for Social Science (SPSS). Frequency counts of demographic details of the respondents were produced.

#### 4. Results and Discussion

Sixty questionnaires were collected and were found useful for the study. The demographic characteristics of the respondents are presented in table 1.

**Table 1: Demographic Characteristics of the Respondents**

Variables	Freq.	Cum. Freq.	%	Cum %
1. Designation of the Respondents (N = 60)				
Architect	4	4	7	7
Builder	8	12	14	21
Civil Engineer	18	30	20	51
Quantity Surveyor	6	36	10	61
Others (please specify)	24	60	39	100
2. Academic qualification of respondents (N = 60)				
OND	8	8	13	13
HND	26	34	43	56
B.Sc	4	38	7	63
PGD	20	58	33	96
M.Sc	2	60	4	100
PhD	-	-	-	-
Others (please specify)	-	-	-	-
3. Professional qualification of respondents (N = 60)				
NIA	6	6	10	10
NIOB	10	16	17	27
NIQS	10	26	17	44
NIESU	4	30	7	51
NSE	30	60	49	100
NITP	-	-	-	-
Others (please specify)	-	-	-	-

NIA = Nigeria Institute of Architects; NIOB = Nigerian Institute of Building, NIQS = Nigerian Institute of Quantity Surveyors; NIESV = Nigerian Institution of Estate Surveyors and Valuers, NSE = Nigerian Society of Engineers; NITP = Nigerian Institute of Town Planners, OND= Ordinary National Diploma, HND= Higher National Diploma, B.S.C= Bachelor of Science, PGD= Post Graduate Diploma, M.S.C= Masters of Science, P.H.D= Doctor of Philosophy.

Majority of the respondents (about 39%) are mainly administrators within the clients' organisation. Majority of the respondents (about 43%) are HND holders. Almost half (49%) of the respondents are members of the Nigerian Society of Engineers.

##### 4.1 Usage of Tendering Methods

Usage indices for 5 tendering methods are shown in table 2. From the table, the most commonly used tendering method (based on the ranking of the mean item scores (MIS) are: selective tendering (3.20); negotiated tendering (2.88); open tendering (2.60); serial tendering (2.20); and the least open-selective tendering (2.16).

**Table 2: Usage of Tendering Methods**

Tendering Methods	Usage Index	Rank
Selective tendering	3.20	1
Negotiated tendering	2.88	2
Open tendering	2.60	3
Serial tendering	2.20	4
Open-selective tendering	2.16	5

The views of the respondents were based on the most commonly used method in tendering process.

#### 4.2 The frequency of use (Tender documents)

The frequency of use of tender documents was assessed from the responses. The level of usage in-terms of ranking of the mean item scores are: Bills of quantities (3.90); working drawings (3.79); form of tender (3.46); standard form of contract (3.33); and schedule of basic prices of materials, labour and plants (2.89) (see table 3).

**Table 3: The frequency of use (Tender documents)**

Tendering Documents	Usage Index	Rank
Bills quantities	3.90	1
Working drawings	3.79	2
Form of tender	3.46	3
Standard form of contract	3.33	4
Schedule of basic prices of materials, labour and plants	2.89	5

#### 4.3 Importance of the Pre-qualification Factors

Importance indices for 16 pre-qualification factors are shown in table 4. From the table the four most important factors (based on the ranking of the mean item scores (MIS) are: Experience of contractor (4.87); quality assurance and control programme (4.32); Equipment resources (4.04); and capacity of contractor (4.03). The four least important factors are: current work load (3.28); amount of work performed earlier (3.20); experience in geographical location of project (3.20); and location of home or head office (3.13).

**Table 4: Importance of pre-qualification factors**

Variables	Importance index	Rank
Experience of contractor	4.87	1
Quality assurance and control programme	4.32	2
Equipment resources	4.04	3
Capacity of contractor	4.03	4
Past performance on previous project	4.00	5
Workforce resources	3.90	6
Project management capabilities	3.82	7
Financial stability	3.56	8
Contractor failure to complete a contract	3.53	9
Management staff available	3.49	10
Contractor organisation	3.46	11
References from previous consultants and clients	3.44	12
Current work load	3.28	13
Amount of work performed earlier	3.20	14
Experience in geographical location of project	3.20	14
Location of home or head office	3.13	16

The views of the respondents were based on the relevance of these factors in pre-qualifying contractors. From the survey all the factors are considered important because all the mean item scores are above 3.00 which mean somewhat important (3.0) on the Likert scale used. The ranking only shows that some factors are more important than others.

#### 4.4 Importance of the criteria for award of contract

Importance indices for 9 criteria are shown on table 5. From the table the four most important criteria (based on the ranking of the mean item scores (MIS) are: technical expertise (4.37); reputation of contractor (4.07); equipment of contractor (3.96); and tender sum (3.90). The four least important criteria are: financial strength (3.77); contract period (3.37); proximity (3.20); and personal connection (2.15).

**Table 5: Importance of the criteria for award of contract**

Variables	Importance index	Rank
Technical expertise	4.37	1
Reputation of contractor	4.07	2
Equipment of contractor	3.96	3
Tender sum	3.90	4
Previous business relationship	3.80	5
Financials strength	3.77	6
Contract period	3.37	7
Proximity	3.20	8
Personal connection	2.15	9

The outcome of this study on criteria for award of contract is divergent when compared with the work of other researchers like (Fong et al, 2000, Kumaraswamy, 1996). The inference from this outcome is suggestive that most clients have de-emphasized reliance on tender sum and have come to accept the importance of other factors that is fundamental in the selection of a contractor.

#### 5. Conclusion and Recommendation

The study has been able to establish the importance of 16 pre-qualification factors and 9 criteria for award of contract. It is obvious that the level of importance of these factors will generally vary from organisation to organisation. What the paper has presented is the overall importance for all organisations. It is important for clients and consultants to take into consideration the experience of contractors, quality assurance, equipment resources and capacity of contractor when taking decision to pre-quality any project. It is also essential that in the award of a contract strong consideration should be given to technical expertise and reputation of the contractor as well as equipment of the contractor and the tender sum.

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