

Assessment of Factors Responsible for the Choice of Contractors' Prequalification Criteria for Civil Engineering Project: Consultants' Perspective

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Abstract— It is not uncommon, during contractor selection process, for prequalifier's decisions to be informed by certain parameters. In the light of this, the choice of the criteria to be eventually adopted depends on factors that play complimentary role when the contractor is to be selected. Therefore, this study assesses the factors that determine the choice of contractors' prequalification criteria for civil engineering project. The purpose is to bring the unrecognised factors into limelight by establishing the degree of their relevance on the choice of contractor's prequalification criteria as well as ascertaining their importance to meeting stakeholder's objectives. The objectives include identifying the factors which determine the choice of contractors' prequalification criteria for civil engineering project and assess the importance of the factors to meeting stakeholders' expectation. The study employ well-structured questionnaire distributed to various category of respondents comprising Civil/Structural Engineers, Quantity Surveyors and Architects engaging in civil engineering project. It adopts percentile, mean item score (MIS) and relative importance index (RII) in the analysis of the data derived from the retrieved questionnaire. Result indicates that, apart from Civil/Structural Engineers, employment into civil engineering organizations favours Quantity Surveyors than Architects. Construction of building is paramount among civil engineering organizations with little involvement in railway project. The choice of contractors' prequalification criteria for civil engineering project is dictated by a number of factors with project type emerging the most influential. Importance of the factors touches the client, consultants and contractor. It recommends that Quantity Surveyors should embrace continuous professional development. Factors influencing the choice of contractors' prequalification criteria must be duly considered before taking final decision on the

criterion/criteria to adopt in choosing the contractor for civil engineering project prioritizing project type.

Keywords— Contractor's prequalification criteria, civil engineering project, project type.

I. BACKGROUND

Responsibility of the construction industry is multi-dimensional. Part of which include meeting the demands and needs of other industries as well as people in the society through products emanating from different project categories. Its products are actually in form of projects derived from building, civil engineering and heavy/industrial engineering [1]. Actualisation of desire to acquire construction project require the involvement of construction professionals irrespective of the project category. Such professionals include Architects, Quantity surveyors and Civil/Structural engineers who do face many challenges bordering on prequalification, tendering and selecting a contractor in the course of performing their responsibilities of appropriately advising the client. These professionals have been differently described by some authors focusing on their duties based on the training received. For instance, [2] and [3] opined that Quantity Surveyor is professionally trained, qualified and experienced in dealing with problems relating to construction cost management and communication in the construction industry. On the other hand, [4] stated that Architect is a professional who creates and construct building, consultation, analysis and design necessary for creation of building and their environment. According to [5], Civil engineer is professional trained to deal with the design, construction, and maintenance of the physical and naturally built environment, including works like roads, bridges, canals, dams, and buildings. In spite of its existing numerous purposes, prequalification can be adopted at early stages of the bidding process in order to select a group of potential contractors. Adopting bid prequalification process

for contractors, project owners can benefit in several ways. If the bid specifications for a contract only require the selection of the lowest-cost bidder, project performance and quality could be jeopardized. Construction projects are risky, and always prone to uncertainties. In view of this, [6] suggested a systematic contractor prequalification process in order to reduce the risks and uncertainties. The process of selecting contractors for a proposed project obviously involve major decision making which may influence the progress and success of any construction project [7]. The work of some authors reveal that contractors can be selected based on some criteria from which client choose for a proposed project [8] and [9]. However, literatures observe that adoption of specific contractor prequalification criterion/criteria demand consideration of some factors. This leads to suggesting that decision makers should consider project characteristics, conditions of the construction market, and project participants in order to enhance the effectiveness of such criterion/criteria. Execution of the decision taken during contractors' prequalification exercise is expected to yield two major results of reducing risk of project failure and increase the chances of project success so as to meet stakeholders' expectations. The effect of project failure, which usually manifest in terms of high initial cost of projects, project inflation, poor quality of works, delay in project delivery and abandonment, has been the principal determinants of the image of Nigeria construction industry. Therefore, chances of achieving a successful construction project may become narrow if client and consultants concentrate on determining the prequalification criteria to be adopted in selecting the contractor for such project. A review of literatures indicate that a lot of research work has been done in the area of prequalification of contractors with much emphasis on the criterion/criteria for selecting the contractor perceived to be the most suitable to undertake the contract for the construction of both building and civil engineering projects [9]; [10]; [8]; and [11]. However, the aspect of factors that influences the choice of the criterion/criteria, which needs proper attention, has not been delved into resulting to dearth of research effort in this area. According to Oforeh (2006) civil engineering projects posses special characteristics demanding peculiar resources for implementation. It is against this background that this research seeks to assess the factors that determine the choice of contractors' prequalification relative to civil engineering project. This work reflects various factors and the degree of their influence in making the choice of contractors' prequalification criterion/criteria focusing civil

engineering project. The result is an eye opener to construction industry participants, especially client and consultants saddled with the responsibility of selecting contractors, as it enables them to appreciate the potential ability of the factors that determine the choice of contractors' prequalification for civil engineering project. It also provides data for further studies and an important tool to compare civil engineering project with other category of construction projects in the construction industry.

II. AIM AND OBJECTIVES OF THE STUDY

The aim of the study is to assess the factors responsible for the choice of contractors' prequalification criteria for civil engineering project. However, the specific objectives are as follows:

- i. to assess the factors which determine the choice of contractors' prequalification criteria for civil engineering project; and
- ii. to evaluate the importance of the factors determining the choice of contractors' prequalification criteria for civil engineering project to meeting stakeholders' expectation

III. REVIEW OF PREVIOUS RELATED STUDIES

3.1 Brief perception on contractors' prequalification criteria and project performance

Construction project development usually witness several decision making exercise. One of such decisions is in respect of selecting the appropriate bidders for a particular project in the face of adversity and uncertainty which must be overcome. No matter how meticulous the development of the contract, poor selection of the contractor(s) to execute the work will surely magnify the problems encountered on the project. In order to overcome these problems, a competent contractor who will be able to complete the project within cost, time and quality is required. This can be achieved through prequalifying contractors prior to the bidding process which is the first stage in the selection process and then through evaluation of tenders. Contractor selection exercise is incomplete without prequalification which is the process of screening construction contractors by project owners or their representatives according to a predetermined set of criteria deemed necessary for successful project performance. The criteria adopted to prequalify contractors are characterized by significant attributes according to [12]. This is often to determine the contractor's competence or ability to participate in the project bid. It implies that there must be a set of principles

(criteria) laid down upon which the standard of acceptance and performance are to be measured even though such criteria varies in emphasis according to the characteristics of the project [13]. Performance of a project in the industry is a source of concern to both public and private sector clients whose expectations includes timely project completion within budget, safety and quality standards. These variables constitute overall client's satisfaction ingredients and stakeholders' expectations. [14] defines performance as monitoring and controlling all projects on regular basis. Failure of any construction project in the industry is mainly related to the problems and failure in respect of performance. [15] remarks that performance problems are in large construction industry due to many reasons such as incompetent contractors, poor estimation, change management, social and technological issues, site related issues, and improper techniques. Civil engineering project is very complex having wide range of different clients and contractors which comprises of public and private clients, main contractors, civil engineers and construction professionals operating within the construction industry. Activities in the industry are being carried out on project basis and could be within an organization [16].

3.2 Factors responsible for the choice of contractors' prequalification criteria for civil engineering project

Customarily, evaluation of contractors is often performed by construction industry professionals using their accumulated experience and judgment. Although, there are variations in the amount of effort and time expended in the process, often without an understanding of how such variations influence the project outcome. An important step in evaluation is to examine contractor's system for handling project information relating to work tasks. Contractor's approach to safety and what actions taken to achieve desired results are also usually scrutinized. All these are to ensure the emergency of the most reliable contractor and preventing the contract getting to a wrong hand. Many parameters have been noticed to come to play in an attempt to determine the contractors that would proceed to the financial bid stage of the selection process. Apart from meeting the requirement of predetermined prequalification criteria, there are other factors considered during contractors' screening exercise before final decision is taken. The following are most of the key factors usually considered when making the choice of contractors' prequalification criterion/criteria.

3.2.1 Project size and complexity

Every construction project is characterized by specific size and complexity leading to describing a project as small or big as well as simple or otherwise. Possession of peculiar features or presence of certain elements has been observed as basis for determining whether a construction project is complex or not. For instance, [17] opines that project complexity stemmed from unclear definition of objectives and the type and standard of knowledge/skill needed for its erection. [18] adds that complex projects have a high degree of disorder and instability. They are sensitive to small changes and are typically dynamic. A large and complex project may have some processes that will have to be iterated several times for the purpose of clear define and meeting stakeholders' requirements.

3.2.2 Client type

The construction industry is apparently endowed with different kind of project owners, comprising public and private organizations as well as individuals. The client is extremely important to the extent that no construction project can exist without a client who initiates and plays significant role of financing all activities in the process of achieving any construction project. [19] opine that little work has been done in the aspect of studying the performance of clients in the construction industry in spite of their indispensability and huge responsibilities. It states that construction industry mainly focused on contractors and supply chain neglecting the performance of client which has not been clearly investigated especially in the developing countries.

3.2.3 Experience of consultants

Consultants in the construction industry are many, each performing specific role at preconstruction, during construction and post construction stages of projects. They ensure that project is completed to the right quality as indicated in the technical specification and standards without running afoul of the time and cost. Some of the diverse roles of consultant in the process of acquiring project include reviewing and updating details, monitoring contractor's operations to ensure timely commencement of operations [20]. Bearing in mind that actualisation of construction project involves different developmental stages; consultant is expected to demonstrate a clear understanding of client's objectives, the project, tender process, construction success, and technical requirement of project.

3.2.4 Project cost

No construction project exists without corresponding cost which is either pre or post determined in the life of the project. In most cases, construction project cost is determined before construction commences. This is to enable the client to have an idea of the financial implication of the project in addition to the fact that cost is a major aspect of the terms of the agreement between the client and contractor. According to [21] project cost evidently ranks among the important parameters determining the success of a project. In spite of the high degree of importance attached to project cost by client, contractor and consultants, completion of project within estimated cost is very rare. This situation is peculiar to virtually all categories of projects in the construction industry [22]. Project cost, having been determined, is expected to be sufficient to execute the project from start to finish. However, construction project can vary from extremely profitable to barely worth it and sometimes end up costing the contractor more than what he is getting paid to complete it. Evidently, client is happy when paying no extra money on project and the contractor getting paid as at when due. Therefore, cost of a project must be managed so that contractors do not suffer while carrying out different projects because contractor is willing to finish project on time.

3.2.5 Environmental factor

The environment where construction project is located feels the impact of the contractor's activities. According to Youker (1992) cited in [23], construction project is affected by elements that are situated outside the confines of the project. It lists a sizeable number of these elements and note that the elements constitute threat to project success and show different degree of influence on projects. The work of Bennette (1991) referenced in [23] indicate that construction activities cannot take place without interference from environmental factors which are capable of straining a successful completion of construction project. Having identified the various environmental factors confronting construction project, it advised that environmental factors should not be neglected in the process of acquiring a construction project.

3.2.6 Duration of project

How long it will take a construction project to come to reality is one of the important variables the client likes to know and forms part of the terms of agreement between the client and contractor. The period within which a construction project must be achieved or delivered constitute part of the benchmarks for judging the

performance of such project [24]. At an early stage in the life of a project, determining the contract duration is one of the critical issues to address because of its importance to assessing the progress and performance of a project as well as the efficiency of the project organization. In spite of the enormity of the research work in the area of construction project duration, [25] submit that construction project still encounter a high degree of uncertainty as far as timely completion is concerned. One of the literatures reviewed in [26] trace the criticism faced by construction industry to failure to complete project on time.

3.2.7 Project type

There are different kinds of construction project delivered by the construction industry according to [27]. They fall into three distinct categories of building, civil and heavy/industrial engineering demanding specific method of construction while execution depends on resource availability, work quantity and complexity of work [1] and [28]. There are obviously different kinds of civil engineering project as listed in [29]. Project type provides a view of the quality the project can be estimated prior to starting of the project or during execution of the project.

3.2.8 Speed of construction

According to Wikipedia, construction is the process of translating designs into reality through involvement of the design team and a contractor selected by means of bidding. In today's fast paced construction environment, clients opt for fast track construction in order to enhance achievement of their intention. To contractors, speed enhances profitability because project is completed without delay and contractor stay on site not more than envisaged. In addition, ability of constructing faster and completing projects on time objectively reflect the capacity of contractor to organize and control site operations, optimally allocate resources and manage the information flow among sub contractors. Construction speed was utilized as a response variable.

3.2.9 Socio-political factor

According to [30] no project exists in a vacuum but it is rather subject to an array of influences from regulatory control to industrial intervention. [31] states that construction project is affected by the social/cultural practices of the people where the project is located. This has to do with the peoples' customs, lifestyles and values believed to be the significant features of a society. Similarly, [32] observe that social/cultural aspect of project

environment relate to numerical size, educational standard, beliefs, language and disposition towards social responsibilities of the people. Consequently, the political environment of a project is concerned with the role played by the government as client, national economy and construction environment regulators. This is done via policies, enactment of laws that are capable of dictating the happenings within the construction industry. Every community apparently exhibit peculiarly different socio-political lifestyles which is potentially capable of influencing the operations of organizations carrying out construction activities in the community [23]. Therefore, [30] opine that contractors of construction project will take cognisance of political aspect that can lead to uncertain environment.

3.2.10 Location of project

In the construction industry, project customarily has specific location. This can be on land, sea rock or river bank. Each project location poses different challenges emanating principally from its nature in addition to geographical status leading to demanding different construction method and approach.

IV. RESEARCH METHODOLOGY

For the purpose of this study, 56 organisations dealing in civil engineering projects, spreading across the state capital of the six south west states of Nigeria were visited. These comprise Ikeja, Ibadan, Abeokuta, Oshogbo, Akure and Ado-Ekiti. Data were obtained by means of questionnaire which allowed respondents to choose from the options provided. The questionnaire was designed to elicit information in respect of respondent's area of professionalism and years of experience so as to set the stage for the study. However, respondents were requested to score the listed factors as well as the importance of the factors contributing to the choice of contractors' prequalification criteria relative to civil engineering project. In order to achieve the ordinal data needed, scoring was between 1 and 5 in each case with 1 accorded the least and 5 the highest rating. Percentile was adopted in analyzing the data relating to background information. Mean item score (MIS) was used to analyse the data in respect of the factors determining the choice of contractors' prequalification criteria using the formula stated below.

$$\text{Mean} \frac{\sum fx}{\sum f} = \frac{f_1x_1 + f_2x_2 + \dots + f_nx_n}{f_1 + x_2 + \dots + f_n} \dots \dots \dots (1)$$

Where:

Σ = Summation symbol

X = Class mark

F = Frequency

Moreover, relative importance index (RII) was utilized in case of the importance of the factors to meeting stakeholders' expectations. The formula stated below was adopted.

Relative Importance Index (RII) =

$$\frac{\sum_{i=1}^n W_i R_i}{\sum_{i=1}^n W_i} \dots \dots \dots (2)$$

Where:

W_i = weight assigned to ith response; w = 1, 2, 3, 4 and 5 for i = 1, 2, 3, 4 and 5 respectively

X_i = frequency of ith response

i = response category index = 1, 2, 3, 4 and 5 for very low, low, moderate, high and very high respectively.

It must be noted that results were ranked in both cases in accordance with their magnitude and presented in tables.

V. RESULTS

5.1 Background information

A total of 107 valid questionnaires were retrieved from target respondents and analysed accordingly. The result of the question posted to identify the area of professional specialization of the consultants is presented in table 1. Over half (53%) are Civil/Structural Engineers while about 33% are Quantity Surveyors. Less than one-quarter (14%) are Architects. This result indicates that Civil/Structural Engineers dominate the organizations visited with reasonable number of Quantity Surveyors and few Architects. However, the presence of Architects in this case may not be unconnected with the likelihood of combining both building and civil engineering projects so as to improve the chances of getting jobs. In order to establish the length of years already spent in the respondents' place of work, table 2 show that majority (49) already spent between 11 and 20 years. Only 22 record between 21 and 30 years of experience while 27 respondents indicate 10 years and below. Few (9) of the respondents have their years of experience established between 31 and 50 years range. The average year of experience of the respondent is about 17 years. This is considered sufficient to acquire relevant experience to justify their competence to provide the reliable data needed in this study.

Table.1: Profession of respondents

Consultants	F	%
Quantity surveying	35	32.71
Architecture	15	14.02
Civil/Structural Engineering	57	53.27
Total	107	100.00

Table.2: Respondents' years of experience

Years	F	X	FX
Less than 10years	27	5	135
11-20years	49	15.5	760
21-30years	22	25.5	561
31-40years	7	35.5	249
41-50years	2	45.5	91
Total	107	127	1796

$$\text{Mean} = \frac{1796}{107} = 16.79 \approx 17 \text{ years.}$$

Consequent upon response to the question posted to establish the level of respondents' involvement in some selected civil engineering projects believed to be common in the target towns, table 3 depict that construction of building polls the highest percentage (55%). This is followed by road construction which scored about 27%. Bridge construction accounted for 10% while construction of dam and railway poll approximately 6% and 2% respectively. The result indicates that the respondents mostly involve in building projects probably because contract for other project types are not easy to win. It can be advanced that building project demand the input of an Architect leading to forming the reason for the engagement of Architects by the civil engineering organizations. The level of involvement of the respondents in dam and railway project is low meaning that these are rarely undertaken.

Table.3: Type of project undertaken

Type of project	F	%	Cum %
Road construction	29	27.1	27.1
Building construction	59	55.1	82.2
Dam construction	6	5.6	87.9
Railway construction	2	1.9	89.7
Bridge construction	11	10.3	100
Total	107	100	

5.2 Factors responsible for the choice of contractors' prequalification for civil engineering project

From table 4, the mean item score of project type is estimated at 4.50 thereby ranking first. This is followed by project type with mean item score of 4.40 leading to ranking second. Consultants' experience and size/complexity of project ranks third and fourth having mean item score of 4.34 and 4.13 respectively. Speed of construction and environmental factor rank fifth and sixth with mean item score of 4.10 and 4.04 respectively. The mean item score of project duration and location is 4.00 and 3.92 leading to ranking seventh and eighth as shown in the table. Client type and socio-political factor has their mean item score estimated at 3.84 and 3.56. These factors came ninth and tenth in the ranking order. The least mean item score from the result is above the mid-point (2.50) of the scale used, meaning that all the listed factors are capable of determining the choice of contractors' prequalification criteria for civil engineering project. In spite of this, a general overview of the result indicate that the mean item score of most (7) of the factors range from 4.00 to 4.50 while that of the remaining three (3), fall between 3.56 and 3.92. This signifies that the factors command different degree of relevance when the choice of contractors' prequalification criteria for civil engineering project is to be made.

Table.4: Factors responsible for the choice of contractors' prequalification criteria

Options	Mean	Rank
project type	4.50	1
Project cost	4.40	2
Experience of consultants	4.34	3
Project size/complexity	4.13	4
Speed of construction	4.10	5
Environmental factor	4.04	6
Duration of project	4.00	7
Location of project	3.92	8
Client type	3.84	9
Socio-political factor	3.56	10

5.3 Importance of factors determining the choice of contractors' prequalification criteria for civil engineering project to meeting stakeholders' expectation

Outcome of the analysis carried out on the data relating to the importance of the factors determining the choice of contractors' prequalification criteria for civil engineering project is presented in table 5. The least and highest relative

importance index of the listed options is estimated at 0.72 and 0.89 respectively. These values are considerably high compared to the mid-point (0.50) of the upper limit (1.00) as far as relative importance index is concerned. This shows

that high degree of importance is derived from factors determining the criteria to be adopted in the selection of contractor for civil engineering project towards meeting expectations of stakeholders.

Table.5: Importance of factors determining the choice of contractors' prequalification criteria for civil engineering project

Options	RII	Rank
Acquisition of necessary experience by the client that can assist in similar future project and ability to absorb subsequent changes	0.89	1
Enhancement of contractors' ability to select competent subcontractors from a list provided by a client	0.87	2
Assists contractors to rely on previous track record and past experience in similar project	0.87	2
Contractors have opportunity to present recommendation from clients in respect of previously completed work	0.86	4
Creates platform for contractors to present proposed detailed programme of work for the project	0.86	4
Clients have the idea of the challenges the contractor will probably encounter while executing the project	0.85	6
Consultants are allowed to demonstrate the level of their knowledge about the project	0.84	7
Consultants are made to be aware of the likely challenges the contractor may encounter when executing the project	0.81	8
Clients are enabled to establish the level of consultant experience	0.81	8
Clients are enabled to have the idea of the quality the contractor will deliver	0.79	10
Early detection of contractors' weakness and identification of when to advice the client by consultants	0.77	11
Establishment of the team's competence by the client	0.76	12
Assists consultants to recommend contractors based on relevant track record and experience	0.72	13

VI. FINDINGS

Professionals in the field of Civil/Structural Engineering predominates organisations dealing in civil engineering project with considerable number of Quantity Surveyors and few Architects. This may be linked to the nature of the training accorded the professionals and project mostly undertaken by the organizations of employment. Besides, it can be deduced that delivery of civil engineering project demand the involvement of Quantity Surveyors than Architects, hence the degree of their employment into civil engineering organizations. The professionals have spent remarkable length of time in their respective organisation of employment, giving them enough opportunity to be involved in different kind of civil engineering project of different magnitude. This accords them opportunity to acquire relevant experience both in the process of selecting contractors and administration of civil engineering project. Also, the organizations engage mostly in construction of buildings, showing that activities within the organizations tend towards the demands of building projects. In spite of this, the organizations also engage in the delivery of civil

engineering products. Therefore, it can be advanced that construction of road is paramount among the professionals compared to construction of bridges, dams and railway. Experience in the construction of bridge may not be unconnected with the road project undertaken by the professionals because of the likelihood of road crossing streams, swampy area and difficult terrains requiring construction of bridges. Furthermore, construction of railway is occasionally undertaken by the professionals. Hence, it can be advanced that railway construction is an uncommon civil engineering project leading to little involvement of the professionals in railway project. This implies that the professional are exposed to slim chances to acquiring experience in railway construction. However, project type is the most important factor to be considered when making the choice of contractors' prequalification criteria for civil engineering project. This signifies that there is possibility of different civil engineering project demanding specific contractors' prequalification criteria. Project cost is also an important yardstick determining the choice of contractors' prequalification criteria as far as civil

engineering project is concerned. Hence, the contractors' prequalification criterion/criteria to be adopted for civil engineering project depend on the cost of the project. Experience of the consultants also counts when the choice of contractors' prequalification criteria is to be made for any kind of civil engineering project. This means that the experience acquired by consultants, which may be peculiar to specific civil engineering project type, also determine the choice of contractors' prequalification criteria. Apart from this, magnitude of civil engineering project may vary; therefore, size/complexity proves to be a good determinant of the choice of contractors' prequalification criteria. The choice of contractors' prequalification criteria also depends on the speed at which construction project is to be delivered. This means professionals pay attention to the eagerness of the client to see his/her project completed on or before the scheduled time expires and therefore would consider speed of construction. In addition, it can be inferred that potential users wish to start enjoying the facility as quickly as possible, even ahead the stipulated date. Bearing in mind that construction projects are usually confronted by environmental challenges which can negatively or positively affect their success, environmental factor also influence the choice of contractors' prequalification criteria for civil engineering project. The time allocated to starting and completing a construction project is among the factors agreed to influence the choice of contractors' prequalification criteria for civil engineering project, meaning that consultants place high premium on project duration. This infers that the period within which a project must be delivered forms part of the essential determinants of the choice of contractors' prequalification criteria for civil engineering project. Project location is also prominent among the factors considered as determinant of the choice of contractors' prequalification criteria for civil engineering project. This implies that taken the geographical location of project into account when making the choice of contractors' prequalification criteria is crucial. This may not be unconnected with the need to put into consideration the various pricing ingredients of the project locality when estimating project cost. Client type, which may be private or public, ranks among the important factor believed to influence the choice of contractors' prequalification criteria for civil engineering project. Consideration of client type, in this case may be in respect of client's characteristics which may be in terms of size and popularity. The socio-political nature of the environment where project is located command great relevance when making the choice of contractors' prequalification criteria

for civil engineering project. The socio-political factors surrounding a project may differ from one place to another. Therefore, it can be deduced that socio-political factor can negatively or positively affect a project.

Factors determining the choice of contractors' prequalification criteria for civil engineering project showcase series of importance to stakeholders while meeting their expectations. In support of the view that contractors can be selected by either the client or his/her representatives, this study is of the opinion that project owner stands to acquire relevant experience that can assist in similar future project and enhance ability to absorb subsequent changes. Furthermore, ability of contractors to select competent subcontractors from a list provided by a client is also enhanced by factors determining the choice of contractors' prequalification criteria in respect of civil engineering project. Contractors are assisted to rely on previous track record and past experience in similar project in addition to having opportunity to present recommendation from clients in respect of previously completed work. Platform to present proposed detailed programme of work for project is created by factors that determine the choice of contractor selection criteria for civil engineering project. Also, clients are given opportunity to have the idea of the challenges the contractor will probably encounter in the process of project delivery while consultants are allowed to demonstrate the level of their knowledge about the project. Consultants are consequently made to be aware of the likely challenges the contractor may encounter when executing the project. Clients are also enabled to establish the level of consultants' experience which may depend on project type among other factors. This study equally indicates that project owner is enabled to have a prior knowledge of the quality the contractor will deliver at an early stage because contractors' weakness and identification of when to advice the client by consultants can be early detected through factors that determine the choice of contractor selection criteria for civil engineering project. Furthermore, opportunity to establish the team's competence is enjoyed by the client while consultants are assisted to recommend contractors based on relevant track record and experience.

VII. CONCLUSION AND RECOMMENDATIONS

Apart from Civil/Structural Engineers, specially trained in the field of engineering, Quantity Surveyor has greater role to play and more useful in civil engineering inclined organizations than Architects. Involvement and experience of the professionals varies according to project type. There

is dearth of railway project leading to corresponding little experience by professionals engaging in civil engineering project. Therefore, it can be submitted that they are vast in construction of buildings and extremely little involvement in railway construction. Professionals are aware of the various factors determining the choice of contractors' prequalification criteria for civil engineering project. In spite of commanding varying degree of relevance, project type emerged the most influential factor as far as civil engineering project is concerned. It should be noted that this is not at the expense of other factors because they show absolutely high degree of influence in determining the choice of contractors' prequalification criteria in this regard. However, factors that determine the choice of contractors' prequalification criteria for civil engineering project are characterized by a number of importance. Scanning the importance of the factors, there is indication that its benefits fall into three dimensions. Hence, it is beneficial to project's key actors comprising owner, consultants and contractor by assisting them to identify appropriate criterion/criteria that can lead to emergence of competent and qualified contractor before awarding any contract. Consequently, it is important to recommend that Quantity Surveyors embrace participation in continuous professional development so as to fortify their relevance in civil engineering project. Also, because of the benefits derivable from the factors influencing the choice of contractors' prequalification criteria, the factors must be considered before making final decision on the choice of the criterion/criteria to be adopted for any civil engineering project. Consideration, in this case, must conform to the ranking order depicted in table 4. This will ultimately give room to balancing such criterion/criteria with attributes of the project and other relevant parameters.

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