

FACTORS AFFECTING PROPER BID EVALUATION IN THE OIL & GAS ENGINEERING, PROCUREMENT AND CONSTRUCTION (EPC) PROJECTS

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ABSTRACT

The Oil & Gas industry is viewed as a significant industry, requiring cautious operations, particularly during the procurement process. Although some progress has been made in the development of innovative procurement strategies in other sectors, the Oil and Gas industry still has a long way to go, this is possibly because the oil and gas industry must be known to be a unique and complex industry. The goal of this paper, and the objectives were set at assessing the factors affecting proper bid evaluation on Oil& Gas EPC projects, the challenge encountered in developing a bid is that the delivery project often has a high degree of uncertainty, meaning the aftermaths in terms of timelines and costs is difficult to predict, Uncertainties often have a bigger impact on the project deliverables than risks. In this study it was revealed that the factor mostly affecting proper bid evaluation is Knowledge on how and to what degree uncertainties/risks have been passed to or shared among parties. This is evident from the research carried out, other identified factors have significantly affected the selected Oil and Gas firms. However, as there remains a variance in responses from the Oil and Gas firms on two of the identified factors namely; Essential characteristics of the project to fulfill client's expectation and Confidentiality of Contract information. Information on proper risk management and risk analysis should be efficiently and timely communicated amongst shareholders and bid evaluation team.

Keywords: Oil and Gas industry, contractor selection, Risks/Uncertainties, Bids, bid evaluation.

1. INTRODUCTION

The oil and gas industry is a prominent industry that is directly related to the construction industry in Nigeria and beyond Naiyeju, Ogedengbe, and Aderoba, (2013). The industry is regarded as one of the most prominent industries in the world. The oil and gas industry, according to (Mohammad and Price, 2003), is more reliant on other specialist disciplines or sectors such as geology, maritime, and mining, this is because the oil and gas industry differs from the construction industry in nature, although they follow the same method as other types and stages of different projects, such as planning, construction, service, maintenance, and decommissioning therefore, in comparison with the general construction industry and the oil and gas industry. Their study further listed some attributes that the oil and gas industry possess which are higher capital and investment costs; higher uncertainty, and risk due to exploratory nature; higher technology and heavy engineering works; increased spastic delivery and supply schedule; larger project scale; and a large number of engineering disciplines from exploration to first oil extraction and production to decommissioning, this is because the industry involves high accuracy and operability.

Inaccuracies in construction process can result to casualties and property losses. In currency terms, it will cause millions of naira in Nigeria, (Obodoh, Amade, Igwe, 2019), compared with other forms of construction, oil and gas-related activities in the construction industry have a higher priority. In the Nigerian oil and gas industry, contract awards are usually made via a tendering and bidding process. The general principle is that bid evaluation must be systematic, comprehensive, and realistic to obtain the best value for money expended, which can only be accomplished by comparing competitive bids honestly (Oad, Kajekwsi, Xia, 2021) in the process of bid evaluation.

Project tendering is the process by which bids are invited from interested contractors to carry out specific packages of services, (Finch, 2011), it is a common procurement method to obtain construction services. The tendering process is an important means by which a fair price and best value for undertaking the works is obtained. This requires a clear project definition and selection of the best delivery method for the project before embarking on the tendering process, Davis & Stafford. (2004). Tendering is a method of obtaining resources to begin a project. A tender is often a set of documents that covers a variety of subjects, for example, instructions to the bidder. The nature of work, contract terms, and technical specifications are all part of this. This may also involve a tender estimate, which is a budget allocation that has been established.

A supplier response to the tender is required as part of the bidding process and the bid must adequately respond to all inquiries in the tender documents. They must also contain all required details, including, if necessary, costing. Supplier proposals will be included in bids, includes considerations such as delivery schedules, availability, and pricing. Naiyeju, Ogedengbe, and Aderoba, (2013), Bidding and its evaluating Procedures, involves invitation to bid and bid submission as well as the technical, contractual and financial appraisal of the submitted bids, which is particularly vulnerable to a variety of schemes that result in fraud and agreement corruption. This is emanated from various factors affecting proper bid evaluation which will be adequately outlined in the literature review.

2. LITREATURE REVIEW

2.0 *Factors affecting proper bid evaluation*

Bids are also regarded as projects, due to the fact that they have deadlines and high expectations is also regarded. The challenge encountered in developing a bid is that the delivery project often has a high degree of uncertainty, (Banaitiene, Banaitis, 2012) meaning the aftermaths in terms of timelines and costs is difficult to predict. But unless the impact of potential risks and uncertainties is understood it's difficult to evaluate how risky a particular bid price might be in terms of making a profit or loss. Uncertainties often have a bigger impact on the project deliverables than risks. It is tempting to think that if the bid team applies more time and effort, the estimates would improve. However, the inherent uncertainties, especially given the lack of detailed information at the bid stage, mean that this is completely unrealistic, "Risk and uncertainty in bidding, (2020).

“Bid evaluation guidance note”(2021),the uncertainty of deliverability (or delivery risk) in a solution should be taken into account during the evaluation of bids. There are a number of methods which can be applied, including: An evaluation of risk within the quality evaluation; or A separate scored and weighted section on risk. Having a separate scored and weighted section on risk provides for a greater focus on risk and is more useful for complex procurements where an assessment of delivery risk is critical. Including the evaluation of risk within the main qualitative evaluation may be more appropriate for lower value/low complexity requirements.

One of the major characteristics of a bid evaluator is; Familiarity with the work, more willing to speak up with opinions and Mitigating evaluation costs, (Smith, 2012), but one of the factors affecting proper bid is evaluation is inability to be familiar with the method of evaluation based on past experience, (Alsaedi, Assaf, Hassanain, Abdallah, 2019) grouped factors affecting bidding decisions under four categories as: project characteristics, market characteristics, contractor characteristics, and owner/designer/labor characteristics. But based on the issue with bid evaluator's familiarity with past projects, in-depth factors such as type of the job, location of the project, duration, historic profit on similar jobs, degree of difficulty, degree of hazards, past project cash flow etc are not considered during bid evaluation, which may emanate various issues arising in terms of contract ward.

According to a study conducted by (Contract Contagion, 2015), bid evaluation rings have changed as the phase has progressed, with the rivalry between rings often resulting in conflict. The inside persons with privileged knowledge (contracts manager/procurement officer/Head of Department) are the secret to a tendering rigging. Only the community with the insider issuing the contract will win the deal, and other rings will not be allowed to participate. In essence, there is a cabal that governs contracts within each department. The steps are as follows: The Head of Department (HOD) creates an internal contract with a target proxy contractor, an informal dialog occurs between the HOD and the proxy to negotiate on the contract profit share.

There are signs that all is not well at the National Petroleum Investment Management Services (NAPIMS), also known as a division in the Nigerian Petroleum Exchange (NIPEX), as the electronic one-stop transaction center that enhances value procurement in the oil and gas industry and institutionalizes world-class contracting processes in Nigeria's Upstream sector has allegedly been compromised and abused by some of the agency's officials. Instead of strictly following the rules when it comes to bidding for contracts and choosing contractors, some NAPIMS officials are reported to have adopted top gap measures to bring in their cronies and relatives under the guise that they are legitimate contractors (Orukpe, (2017).

As stated in a study by (Onuche, 2021) in regards to Nigerian content, Act Section 14 of the Act mandates that Nigerian content be taken into consideration during the evaluation of any bid. The study specifies that if bids are within 1% of each other at the commercial stage of the bidding

process, the bid with the highest amount of Nigerian content should be chosen as long as it is at least 5% higher than its nearest rival, as given by the Nigerian Content bill. Section 15 of the Act mandates that all multinational corporations (MNC) and alliance partners offer indigenous contractors an equal chance to bid on goods and services. If an indigenous company has the ability and capacity to complete a project, it should not be excluded solely because it is the lowest financial bidder, as long as the value of the project does not exceed 10%.

Bidding and bid review team are expected to ensure that EPC contracts are awarded to the appropriate construction firms. The bidding and bid evaluation process, which includes invitations to bid and bid submission as well as technical, contractual, and financial evaluation of submitted bids, is especially vulnerable to a variety of fraud and agreement corruption schemes Naiyeju, Ogedengbe, & Aderoba, (2013). A competitive tender can be used for selection, in which selected suppliers must apply their most competitive price for the item in question. In certain cases, a supplier can be chosen based on factors such as product patents and/or bid uniqueness (Designing Buildings Wiki, 2019). Before the project engineer submits any request, a technical evaluation must be completed for the engineer to have a technical understanding of the offer as well as the methods to use in carrying out the project which will enable him interpret and technical questions stated in the bids, this is to avoid issues during bid evaluation, in which, most bid evaluators go through.

Contractual and financial appraisals, according to Naiyeju et al., (2013), should be performed by contract engineers with relevant experience in which most times these professionals are not available in the bid evaluation team. When the team of evaluators are inadequate, or the level of expertise of each team member is not taken into account, the assessment process faces a major challenge, as the back door process, which contains corruption techniques, is pursued by the contractors in the long run. The bid evaluation process is a multi-objective decision-making scenario in which a variety of approaches have been developed to overcome related project evaluation processes, Papandreou, Zohar, (1974), Sharif, Adulbhan, (1975).

Bidding and contract assessment, according to Naiyeju, Ogedengbe, and Aderoba (2018) is a procedure that includes the invitation to bid and bid submission as well as the technical, contractual, and financial assessment of submitted bids, is especially vulnerable to a variety of fraud and agreement corruption schemes. A few of the most popular challenges in contractor selection include: Weak procurement committee member selection, insufficient procurement training for team members, evaluation team lacks procurement ethics awareness, evaluation team lacks experience in tender evaluation, poor understanding of evaluation requirements, and time spent evaluating bids (Naiyeju et al, 2018).

Furthermore, it is critical not to underestimate the magnitude of a task, as systematic underestimation of the cost and time required to complete any project activities, as well as systematic underestimation of management resources, especially managerial talent, are some of the most significant risks that organizations face. Given the inevitability of risk in any project, risk assessments in the Nigerian oil and gas industries should be taken more seriously rather than allowing any influences in the contract award, Naiyeju, Ogedengbe, Aderoba, (2018). When this team of evaluators is partial, and/or the level of expertise of each team member is not taken into account, the assessment process is significantly hampered.

According to (Owote, 2019), some of the major practical challenges involves having a personal interest in a specific platform for bid solicitation and evading the use of the right platform/medium for bid solicitation. A significant challenge of Tendering and Bid Evaluation was stated by (Elegbe 2014), he reviewed on how well the Public Procurement Act (PPA) requires the use of advertising methods to ensure a competitive range of suppliers, which is the first listed objective of public procurement regulation.

Naiyeju, ogedengbe, and Aderoba (2018) conducted a study to establish a standard evaluation system for the evaluation of bids in the upstream sector of the Nigerian oil and gas industry to avoid a lack of transparency, nepotism among certain contractors, and personalized evaluation. The study developed a standard assessment method for determining bid value for the upstream field of the Nigerian oil and gas industry. To model the bid evaluation problem, the study explores various methods, including the current weighted-average method, which was updated, as well as sequential elimination and goal programming methods.

The updated weighted average model offers a stiffer evaluation than the current model, according to the study's model evaluation using realistic case studies. Nonetheless, the goal programming model offers a more rigorous evaluation than the adjusted weighted average model (Ganti, 2021), even though both tend to display similar patterns in terms of bidder company ratings. Also, the sequential elimination model was found to have excluded some of the bidder companies that were deemed incompetent in some areas that were essential for the contract's proper execution.

The weighted method of bid evaluation, which requires the manual computation of bid appraisal, does not have standardized components, but it appears to be very common due to its simplicity. However, as demonstrated by previous studies, the approaches appear to ask too much of decision-makers Sharif, Adulbhan, (1975). The weighted approach has some significant flaws. For example, it is contingent on the decision makers' subjective judgment. Second, poor performance in one segment can be offset by a strong performance in another. Third, the risks associated with contractor data inconsistency are not taken into account. Forth is the uncertainties associated with differing decision- maker's viewpoints that are not taken into account. Finally, different standards for different measurement units are incompatible, Elsayah, (2016).

The sequential elimination method of contractor selection faces a major challenge of uncertainty, in which requirements are not explicitly specified to the evaluator in certain situations, requiring each evaluator to formulate his criteria, with the consequence that each evaluator uses various sets of criteria, resulting in the poor ranking, Black, David, Cheen, (1975). Another downside of this approach is that it becomes tedious if there are a large number of contractors and evaluators. The target programming methods of selection result in a large number of goals or excessively ambitious aspiration levels, ie, those that are similar to the ideal goal, James, Ignazio& Romero, (2003).

3.0 METHODOLOGY

The methodology and method used in this paper are listed in this section. It specifies the scope, target respondents, and sampling and data collection methodology.

3.01 RESEARCH DESIGN

The first step in this research was to perform a comprehensive analysis of the literature, which was collected from articles, textbooks, and publications on the topic on factors affecting proper bid evaluation in the Nigerian Oil and Gas industry. On this research, information was gotten through structured questionnaires which will be administered (by self and electronic means) by the researcher or other aids to the respondents.

3.02 CASE STUDY

A case study methodology was used to conduct this research. The choice of case study for this study arose from the fact that the Nigerian Oil and Gas procurement system lacks uniform tendering procedures, bid evaluation methods, and contractor selection methods. There is also no definite system of evaluating bids in the Oil and Gas bidding, most organizations, in the Oil and Gas sector have their own unique process of evaluating bids.

For this paper, procurement officers, project engineers, and quantity surveyors working in International Oil and Gas companies (IOCs) like Chevron, Mobil, Shell, Governmental Oil and Gas Corporations such as Warri Refinery Petrochemical company (WRPC), Port Harcourt Refinery company (PHRC), was the subject of this approach.

3.03 RESEARCH POPULATION

The population was characterized by procurement officers, project engineers, and Quantity surveyors practicing in IOCs, (Chevron, Mobil & Shell), Governmental Oil and Gas corporations (WRPC, PHRC) and Oil and Gas private companies.

3.04 SAMPLING TECHNIQUE

Convenience sampling technique was called to action in administering the questionnaires. The reason behind the employment of this type of sampling technique is because of the peculiarity of the study and the uniqueness of the oil and gas industry.

3.05 SAMPLING SIZE

A study work sample must be of an appropriate size, i.e., it should not be too / excessively large or too small (Oke, 2015). For this research, heads of departments (procurement officers, project engineers, architects, and Quantity surveyors) of the listed oil and gas industries and one

other member from each department was identified and questionnaires administered to these professionals.

SAMPLING SIZE:

S/N	POPULATION	NUMBERS
1	Architects	Chevron, Mobile, Shell, WRPC and PHRC
2	Quantity Surveyors	Mobil, Shell, WRPC, PHRC and Chevron
3	Procurement officers	Mobile, Shell, WRPC, PHRC and Chevron
4	Engineers	Mobil, Shell, WRPC, PHRC and Chevron
	Total	113

3.06 DATA COLLECTION INSTRUMENT

These are practical ways to get information about topics of interest from the field from a variety of available resources. Kothari and Garg (2014) believe that the questionnaire is a set of questions designed by investigators to get some concise and accurate information for specific questions. The answers to these questions were collected, analyzed, and presented instead of achieving research goals. The use of questionnaires is very advantageous because it saves time significantly compared with interviews and can cover more people in a shorter time (Grove et al., 2014).

The Section A of the questionnaire contains the respondent background information. The following sections after that were addressed towards each of the remaining objectives. A 5-point Likert scale would be used in rating the opinions; where 5= very high, 4=high, 3=average, 2=low, 1=very low.

3.07 METHOD OF DATA ANALYSIS

The appropriate way of analyzing data is always fundamental in any research work, to process the data collected accurately. This section explains the various statistical techniques that was employed in analyzing the data accrued from the respondents to accomplish the aim and objectives of this research. The analysis of collected data was carried out using the following descriptive and inferential statistical methods as appropriate; Percentiles, Means, Standard deviation, Kruskal Wallis etc.

3.71 Frequency Distribution and Percentage

Frequency and percentage were used to analyze background information of the respondents. The background information includes “highest academic qualification of the respondents”, “year of working experience” and other relevant information necessary to underpin the suitability of the respondents to give valid information to achieve the aim of this study. This method identified the frequency of selected variables for a unit element. The result was presented in approved table form.

3.7.2 Mean Item Score (MIS)

Mean Item Score (MIS) was used to analyze the response of the respondents on all the objectives of the study, arranging the variables in the order of priority. This involves assigning numerical value of 5-point Likert to rank the given factor. The analyzed data for this study was also presented in well-coordinated manner (tables) showing the numerical and non-numerical data for easy view of the analyzed information.

$$\text{MIS} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{n_5 + n_4 + n_3 + n_2 + n_1}$$

Where n is the frequency of each ranking

3.7.3 Kruskal Wallis Test

Kruskal Wallis test is used to determine if three or more groups have the same interest or not when an ordinary data is available. According to Chan and Walmsley (1997), the purpose is look for the same form of distribution between samples and the population from which they are from. It doesn't assume around the sampled population in each group, and it is employed to examine the different opinions of various groups of respondents. Kruskal Wallis test was used to examine the difference in opinions of the different categories of professionals

4.0 RESULTS AND DISCUSSION

5.0 The comprehensive analysis of data was carried out through relative descriptive and analytical statistical methods with the aim of achieving the aim of the study which is to assess the bidding process in the Oil and Gas procurement system. For proper analysis and pinpoint reporting, each research question was taken by its own advantage and responses obtained were adequately discussed.

The essence of this chapter is to present analysis of data collected in line with the methodology stated in chapter three of this work. This chapter also comprise of the discussion of findings. The sub-headings in the chapter are guided by the objectives of the study. All tables and figures presented are results from the author's survey unless otherwise stated.

4.2 Response to Questionnaire

Table 4.1 below presents the breakdown of the return rate of the population to the questionnaires sent out.

Table 1: Response Rate of Respondents

Role	Number Distributed	Number Retrieved	% Retrieved
Quantity Surveyor	23	17	73.91
Architect	17	15	88.23

Procurement Officer	35	25	71.42
Engineer	38	24	63.15
Total	113	81	71.68

Out of the one hundred and thirteen (113) questionnaires sent out to construction professionals (Quantity Surveyors, Architects, Procurement officers and Engineers) who have worked in Chevron, Mobil, Shell, WRPC, and PHRC on Oil and Gas EPC Projects project in Port-harcourt and Warri, a high return rate of 88.23% was recorded for Architects, while a return rate of 73.91%, 71.42% and 63.15% was recorded for Quantity Surveyors, Procurement officers and Engineers respectively. An overall return rate of approximately 72% was recorded across all four professional groups as reported in Table 1.



4.3 Background Information

Table 2 Background Information

Demographic Variables	Frequency	Percentage (%)
Designation of respondent		
Procurement Officer	25	30.9
Engineer	24	29.6
Quantity Surveyor	17	21.0
Architect	15	18.5

Total	81	100.0
Highest Academic qualification of respondent		
M.Tech/M.Sc	50	61.7
B.Tech/B.Sc	18	22.2
Ph.D	13	16.0
Total	81	100
Oil and Gas Companies the respondent is working at		
Chevron	18	22.2
Mobil	18	22.2
Shell	18	22.2
PHRC	14	17.3
WRPC	13	16.0
Total	81	100
Years of working in a Nigerian Oil & Gas firm		
11-15years	34	42.0
6-10years	21	25.9
16 -20years	18	22.2
0-5years	4	4.9
Over 20years	4	4.9
Total	81	100
Numbers of Oil & Gas Project handled		
Above 20	30	37.0
16 -20	28	34.6
11-15	12	14.8
5-10	10	12.3
Less than 5	1	1.2
Total	81	100

Table 1 presents the background information of the respondents for this research. The categories of these professionals varied in terms of the role they played when handling Oil and Gas EPC projects.

The results in Table 1 shows that of all the respondents that participated in the study, approximately 31% were Architects,29.6% were Engineers, while Quantity Surveyors and

Architects were 21% and 18.5% respectively. Majority of these professionals have at least earned a Masters degree with a percentage of 61.7%, while 22.2% and 16.0% have earned a B.Tech/B.Sc and Ph.D respectively. 22.2% of these respondents work in Chevron, Mobil, and Shell, 17.3% work in PHRC and 16% work in WRPC. However, 42% of them have worked in these Oil and Gas firms for 11-15years, 25.9% have worked for 6-10years, 22.2% have worked for 16-20years, while 4.9% have worked for 0-5years and Over 20years.

While most of these respondents have handled above 20 Oil and Gas projects with a percentage of 37%, 34.6% have handled between 16-20 Oil and Gas projects, 14.8% have handled between 11-15 Oil and Gas projects, 12.3% have handled between 5-10 Oil and Gas projects and just 1.2% have handled less than 5 Oil and Gas projects.

Table 3 Factors Affecting Proper Bid Evaluation (Mean Standard Deviation)

FACTORS AFFECTING PROPER BID EVALUATION	MEAN	STD DEVIATION	RANK
Knowledge on how and to what degree uncertainties/risks have been passed to or shared among parties	4.679	4.79799	1
Need to achieve value for money and accountability	4.642	0.63853	2
Keeping expenditure within budgeted estimate and a knowledge of how much client shall pay at each construction phases	4.6173	0.76759	3
Essential characteristics of the project to fulfil client's expectation	4.5063	0.8454	4
Confidentiality of Contract information	4.4691	0.86727	5
FACTORS AFFECTING PROPER BID EVALUATION	MEAN	STD DEVIATION	RANK
Familiarity with the method based on previous experience	4.3951	0.56301	6
Need for speed during both the design and construction stages	4.321	0.6486	7
Government Policy on using a particular procurement route	4.321	0.80354	8
Ability to accommodate changes during design and construction phase	4.321	0.98523	9

Assessment of project completion time within the agreed duration	4.1481	0.95015	10
Need for competent contractors to handle client's unique and high technology requirements	4.0247	1.19348	11
Partiality by Bid evaluators	3.4568	0.93607	12
Absence of regulating bodies/agencies on EPC Suppliers	3.4467	0.8374	13
Dispute resolution and arbitration	3.1852	1.10805	14

Table 3 Factors Affecting Proper Bid Evaluation (Mean Standard Deviation Contd)

Table 3 shows the Factors Affecting Proper Bid Evaluation. As depicted in the table above, Knowledge on how and to what degree uncertainties/risks have been passed to or shared among parties is the highest identified factor affecting Proper bid evaluation with a mean Score of 4.6790 i.e. ranking 1st. Second ranked factor affecting Proper bid evaluation is Need to achieve value for money and accountability with a mean score of 4.6420. Keeping expenditure within budgeted estimate and knowledge of how much client shall pay at each construction phases and Essential characteristics of the project to fulfill client's expectation are third and fourth ranked with mean scores 4.6173 and 4.5063 respectively. The fifth ranked is Confidentiality of Contract information with a mean score of 4.4691. Familiarity with the method based on previous experience with a mean score of 4.3951 is ranked 6th. Need for speed during both the design and construction stages, Government Policy on using a particular procurement route and Ability to accommodate changes during design and construction phase is rank seventh, eighth and ninth with the same mean scores of 4.3210 and separated with standard deviation of 0.64860, 0.80354 and 0.98523 respectively.

The tenth ranked is Assessment of project completion time within the agreed duration with a mean score of 4.1481. Need for competent contractors to handle client's unique and high technology requirements and Partiality by Bid evaluators are eleventh and twelfth ranked, with a

mean score 4.0247 and 3.4568 respectively. Next up after those is absence of regulating bodies/agencies on EPC Suppliers with mean scores 3.4467.

The lastly ranked factor affecting Proper bid evaluation i.e. 19th is Dispute resolution and arbitration, with a mean score of 3.1852.

Table 4: Factors Affecting Proper Bid Evaluation (Kruskal Wallis)

S/N	Factors Affecting Proper Bid Evaluation	Chi-Square	df	Asymp. Sig.
1	Need for competent contractors to handle client's unique and high technology requirements	3.065	4	0.547
2	Need for speed during both the design and construction stages	6.562	4	0.161
3	Need to achieve value for money and accountability	0.846	4	0.932
4	Ability to accommodate changes during design and construction phase	4.992	4	0.288
5	Essential characteristics of the project to fulfil client's expectation	10.729	4	0.030
6	Familiarity with the method based on previous experience	8.633	4	0.071
7	Keeping expenditure within budgeted estimate and a knowledge of how much client shall pay at each construction phases	0.73	4	0.948
8	Government Policy on using a particular procurement route	1.962	4	0.743
9	Dispute resolution and arbitration	1.138	4	0.888
S/N	Factors Affecting Proper Bid Evaluation	Chi-Square	df	Asymp. Sig.
10	Knowledge on how and to what degree uncertainties/risks have been passed to or shared among parties	6.308	4	0.177
11	Assessment of project completion time within the agreed duration	6.979	4	0.137
12	Absence of regulating bodies/agencies on EPC Suppliers	7.251	4	0.123
13	Partiality by Bid evaluators	9.113	4	0.058

14	Confidentiality of Contract information	11.551	4	0.021
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Table 4: Factors Affecting Proper Bid Evaluation (Kruskal Wallis Contd)

a: Kruskal Wallis Test

b: Grouping variable: Respondents' Oil & Gas firms

Table 4 above shows the result of the Kruskal-Wallis H test on the dataset for; “factors affecting proper bid evaluation”. The aim is to identify if there are varying perspectives to the identified factors affecting proper bid evaluation from the respondents' Oil and Gas firms, as perceived by the professionals involved in coordinating Oil and Gas EPC Projects. The grouping variable as seen above is the “Respondents' Oil and Gas firms”. The table also presents the Chi-square value, the degree of freedom and the Significance values of the identified factors affecting proper bid evaluation on EPC projects. However, the one that is most important in the decision-rule is undoubtedly, the significance level.

For Significance values in a Kruskal Wallis H Test; all values lesser than .05 (sig. value) depicts a noticeable and sizeable variance in the opinions of the respondents. Hence, from the table, the values emboldened, which are less than .05 mean that opinions vary on those particular data type (factors affecting proper bid evaluation, in this case). In lieu of this, Essential characteristics of the project to fulfill client's expectation (0.030) and Confidentiality of Contract information (0.021) have varying opinions across board.

6.0 DISCUSSION OF FINDINGS

Naiyeju et al (2013) suggested that it is crucial not to underestimate the size of a task, as systematic underestimation of the expense and time necessary to complete any project activities; systematic underestimation of management resources, especially managerial talent, required to achieve objectives successfully are some of the biggest risks that organizations face. From this study, it

was revealed that the factor mostly affecting proper bid evaluation is Knowledge on how and to what degree uncertainties/risks have been passed to or shared among parties, this supports the point stated by .‘ (<https://tfig.unece.org/contents/guarantees.htm>, 2012)) Which indicated that uncertainties often have a bigger impact on the project deliverables than risks, However, the inherent uncertainties, especially given the lack of detailed information at the bid stage, mean that this is completely unrealistic.

‘Bid evaluation guidance note’(2021), indicated that assessment of delivery risk is critical. Including the evaluation of risk within the main qualitative evaluation may be more appropriate for lower value/low complexity requirements this is align with the outcome of this study which concludes that one of the major factors affecting bid evaluation is knowledge on how and to what degree uncertainties/risks have been passed to or shared among parties

All the identified factors have significantly affected the selected Oil and Gas firms. However, as there remains a variance in responses from the Oil and Gas firms on two of the identified factors namely; Essential characteristics of the project to fulfill client's expectation and Confidentiality of Contract information.

7.0 CONCLUSION:

In this study it was revealed that the factor mostly affecting proper bid evaluation is Knowledge on how and to what degree uncertainties/risks have been passed to or shared among parties. This is evident from the research carried out, other identified factors have significantly affected the selected Oil and Gas firms. However, as there remains a variance in responses from the Oil and Gas firms on two of the identified factors namely; Essential characteristics of the project to fulfill client's expectation and Confidentiality of Contract information. Information on proper risk

management and risk analysis should be efficiently and timely communicated amongst shareholders and bid evaluation team.

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