CLIENT AND CONSULTANT ORGANISATIONS' ASSESSMENT OF DESIGN-BID-BUILD PROCUREMENT PRACTICE IN NIGERIA

M.O. Dada[1*]
[1]*Department of Building, University of Lagos*
Akoka, Yaba, Lagos, Nigeria
*Corresponding author: mdada@unilag.edu.ng

Abstract
Despite criticisms, the design-bid-build (otherwise called the traditional) procurement method has been the commonest method for project delivery in both the private and public sectors of Nigeria. This study sought to investigate the assessment of client and consultant organizations on the use of the traditional method for project delivery in Nigeria. A set of 155 questionnaires were administered purposively on consulting and client organizations in Nigeria. 65 organizations responded to the questionnaire. The responses were analyzed through the use of descriptive and inferential statistical tools. Using an ordinal scale, respondents were requested to express their agreement or otherwise with twenty issues raised on traditional project procurement. The aggregation for the two groups indicates that 'Individual participants are exploitative of loopholes in contract documents ranked first among the issues being assessed. 'Relationships among participants breed mistrust' ranked least among the issues. The results of the analysis further indicate that there are no significant correlations in the ranking of issues among the two groups. Some of the findings of the research do not match with some issues raised in literature about the traditional project procurement practice. It is recommended that efforts are made to engage in stakeholder management of the two groups regarding the traditional procurement process.

Key words: design-bid-build, perception, procurement, Nigeria, traditional method.

Introduction

The construction industry plays an important role for the growth and development of nations. The industry does this through the provision of new infrastructure and the maintenance or deconstruction of existing ones. In addition to the provision or maintenance of infrastructure, the industry contributes to the gross domestic product of nations (Idoro, 2007; Dada & Oladokun, 2008; Ogunlana, 2010). The industry is also responsible for the provision of shelter, buildings and other infrastructure that adds to, or supports the quality of life of the citizenry. The industry is responsible for the procurement of the construction project or product. While the construction industry has been seen as a multi-party business (Rahman & Kuraswamy, 2002), the organization for the procurement of the construction project or product is often-times a temporary multi-organization (Newcombe, Langford & Fellows, 1990**;** Murray, Langford, Hardcastle & Tookey, 1999). These features combine to explain the peculiar nature of the industry. Erikkson (2008) indicated that construction transactions are characterized by high complexity, customization, long duration and high uncertainty.

The inference from the works of Naoum (2003), Kuprenas and Nasr (2007), Ojo, Aina and Adeyemi (2011), Ogunsanmi, Salako and Ajayi (2011), and Idoro (2012) are that the traditional project procurement method is being challenged through the emergence or performance of other alternatives. . Erikkson (2008) also reasoned that while clients want to establish more co-operative relationships with contractors, obviously through alternative procurement methods, their choice of procurement methods is not consistent with their wish. According to Erikkson (2008), there is a difference between desired situation and actual behavior or response of clients possibly due to earlier experience. It is understood that the procurement of public sector works in many countries has been through the traditional competitive method for purposes that include transparency, accountability and satisfaction of associated legal requirements (Masterman, 1992). The private sector however, not bound by law regarding the method of letting out works. However, the traditional project procurement method has been the most dominant in the procurement of building works in many countries (Gordon, 1994; Ling, Ofori & Low, 2003; Nubi, 2003). Interestingly, Idoro, Iyagba and Odusami (2007) investigated the situation in Nigeria and concluded that the traditional method remains the most dominant and preferred or fashionable method in the letting of both public and private works. In essence, part of the findings of Idoro et al (2007) on Nigeria is that the traditional procurement method is the leading and the most preferred method in the private sector. This is in spite of the fact that the traditional method has been criticized severally, and even in Nigeria, for what are regarded or perceived as its shortcomings. Just like criticisms that obtained concerning the procurement method in United Kingdom, the traditional method does not give a guarantee of certainty of final cost. The

method may only succeed in giving a guarantee of certainty of initial cost. Experiences or cases have been reported in Nigeria where contracts were deliberately let at a very low price, (a practice also reported by Tsai and Chi (2009) as bidding low for award and filing claim for reward later), with the intention of hiking the price later through deliberate manipulation or exploitation of loopholes in the contract documents. Inflation or escalation of contract cost, among others, ensued in the process (Ameh & Odusami, 2007). Consequently, clients and respective parties do not derive the required benefits. This is despite the fact that there are relevant parties and assumed or appropriate contract documentation that are intended to protect them. In the end, many projects executed with the procurement method experience cost escalation, shoddy workmanship, project abandonment and other manifestations of project failure. This is a drain and a costly feature to a developing economy such as Nigeria and these warrants an examination of the procurement path. Furthermore, a shift in the procurement paradigm to emergent ones has been advocated and reported in some countries and Nigeria (Cheung & Chan, 2011; Adegoke et al., 2010; Forrer, Kee & Newcomer, 2010; Sarmento, 2010; Dada & Oladokun, 2008). There is little or no evidence. However, to suggest that the clamour is an outcome of empirical investigation in the environment of the research. Hence the need to empirically investigate opinions held by two stakeholder groups in construction project procurement in Nigeria. This investigation becomes more necessary because of the important roles of stakeholder management in construction procurement.

Following the logic of Erikkson (2008), who reported a difference between desired situation and actual behavior, this study set out to investigate perceptions of two stakeholders, clients and consultants, on issues that have to do with the practice of the traditional project procurement. Managing stakeholder views on projects and programs has been adjudged as one of the necessary steps in project ownership and success of intervention efforts (Li, Ng & Skitmore, 2012; Yuan, Skibniewski, Li & Zeng, 2010; El-Gohary et al., 2006). The study would reflect the perceptions of the two groups on the issues. The relevance to the investigation of those perceptions is that perceptions, whether right or wrong, have been argued to affect responses, decisions and market behavior and customer patronage. Perceptions may be subjective and intangible, yet they have the power to influence objective reality and the tangible (Weaver, 1981; Smith & Nagle, 1995; Smyth & Edkins, 2007). The implication is that in an age of increased competitiveness, the management of perceptions of stakeholders in an endeavor can have effect on the success of the endeavor. It is thus in this context that an empirical investigation is made into assessment of issues on traditional project procurement. Furthermore, the client and consultants are those who often take procurement decisions at the early stage of the project. Investigating their views and perceptions is a possible step for understanding procurement decisions in the environment of the research. Furthermore, the study has the potential for contributing to the body of knowledge on traditional procurement practice in Nigeria.

Literature Review - Fundamentals of Traditional Procurement

Some perspectives on procurement and principles of traditional procurement are examined. This is then followed by some critique and works on traditional procurement.

Perspectives on procurement and principles of traditional procurement

Procurement is the organizational design that determines the line of relationships and communication between and among project participants among which are clients, contractors and consultants. The contractual arrangement and organizational deployment of participants for the realization of the building project matters. Procurement is perceived by researchers and practitioners from several worldviews. The views include: view of organization as a system (scientific management); biological organism (system approach); states of flux and transformation; a socio-technical framework (McDermott, 1999 citing Green (1994)) Furthermore among perspectives to the study of selection of procurement is the situational or contingency approach. This perspective acknowledges that no single procurement method is applicable and adaptable to all situations (Yinghui and Eng, 1999; Rowlinson, 1999). No one method is a cure-all. A related perspective is the socio-technical perspective. The approach assumes that the selection of procurement method cannot just be based on objective data alone but on a combination of objective and subjective reality. It acknowledges the interaction between objective and subjective reality-the human aspect. The subjective reality though intangible can have tangible and far-reaching influence on procurement selection. As human beings are not mechanistic, they play a part in the procurement process and thus influence procurement decisions.

The foundations of the traditional project procurement method can be located in the theory and doctrine of division of labour propounded by Adam Smith. Division of labour as enunciated by Adam Smith was to promote specialization. Division of labour was also premised on the understanding that specialization would increase expertise and productivity. The advent of the first

Industrial Revolution also reinforced the need for specialization and economic reorganization (Taylor, Norval, Hindle, Rwelamila & McDermott, 1999). With the economic reorganization came social reorganization where structures evolved in forms of guilds and professions. In construction, a class system emerged where the client first came in touch with the architect who prepared his designs and then passed on to other professionals to prepare their own design and inputs, after which the contractor tendered for the job. Consequently in the traditional procurement method, a serial project development philosophy is practised. In the twenty first century, sophistication continues with the possibility of virtual or physical collocation of participants to develop a product (Lee-Kelley, 2006; Kozlowski & Ilgen, 2006). While different specialists may work together to achieve a project, the emphasis on collaboration even among functional disciplines especially in the age of technological advancement is emphasized. While not throwing away the possible advantages of different specialists working together to achieve a goal, the emphasis on experts working as a team is pronounced. Thus, in a way that signals a departure from differentiation, technological advancement and sophistication has affected product development and processes pointing to the use of teams and integration. This view is captured by Freeman-Bell and Balkwill (1993) who argued that modern engineering invention is not a solo flight. In essence, the philosophy behind traditional project procurement is analogous or can be traced to the economic theory of differentiation in work execution or, in other words, the economic theory of division of labour.

Some critique and works on traditional procurement

The traditional procurement method is one of the options for construction project delivery. The traditional method retains the name traditional as in Rowlinson (1999) because it is an offshoot of the differentiation between designers and contractors. In this method the owner or client contacts an architect or an engineer, as the case may be, who appoints other consultants to design, and then construction is awarded to a contractor. A primary feature of this method is that design is separated from construction. Furthermore there is a serial, sequential approach to the design and construction. The concept of traditional procurement method imposes a contractual and organizational separation of design from construction. The possibility of the traditional method enhancing the certainty of final cost, and the achievement of quality and functional considerations and the room for competition in letting out works are among the reported strengths of the method (Masterman, 1992). However, some criticisms of the traditional procurement method have been reported. Table 1 presents a summary of some of the criticisms of the traditional procurement documentation and practice.

Table 1: Summary of key criticisms of the design-bid-build procurement practice

Issues	Authors or Sources
Serial and hierarchical project development philosophy with possible time and cost implications	Wells (1986)
Lack of single point responsibility	Odeh and Battaineh, (2002); Ojo et al. (2011)
Adversarial relationships among project participants threatening project goals; party spirit instead of team spirit	Odeh and Battaineh, (2002); Wells (1986); Garza et al. (1994)
Participant's conflicting loyalties with respect to project objectives	Garza, Alcantara, Kapoor, and Ramesh (1994); Miles (1996)
Claim consciousness of participants and exploiting loopholes in contract documents	Ofori (1990); De-Valence and Houn (1999)
The lack of the mandatory input of contractors into the design stage and not taking advantage of their experience	Ofori (1990); De-Valence and Houn (1999); Othman (2011)
Lack of commitment to project objectives or lack of customer focus	Ofori (1990); De-Valence and Houn (1999); Miles (1996)
Parochial attitudes and biases that often time become overriding to overshadow project goals	Fleming and Koppleman, (1997)
The possibility of the legal contracts that bind project participants together becoming the basis for finger pointing, litigation and broken relationships	De-Valence and Houn (1999).
No guarantee of certainty of final cost, only initial cost	Masterman (1992)
Lack of single point responsibility	Dada (2004); Ogunsanmi et al. (2012)
The traditional method with its rigid definition of roles and responsibilities provides no basis for shared vision or goals. Furthermore, each party has its own agenda based on its singular interest.	Miles (1996)
Hierarchical relationships which make communication and transfer of knowledge among participants difficult.	Wells (1986); Othman (2011)
Compartmentalisation of project participants around functional and professional lines is seen to lead to poor communication, undermine relationships among team members and leads to poor buildability or constructability	Wells (1986); Othman (2011)
The traditional method produces a structure that makes the construction industry an arena of conflicts	Wells (1986)
The orthodoxy and conservatism in the traditional procurement method	Lennard (1986)

stifle innovation	
Lowest price posited in traditional method is never an indication of best price	Dozzi et. al. (1996).
taining the lowest price sometimes fails to exploit constructability alternative methods and materials and teamwork	Dozzi et. al. (1996).
The traditional procurement method is a highly prescriptive system founded on the belief that customers are ignorant of the process	Taylor et al. (1999)
The traditional method is unsuitable for meeting the developmental challenges of developing countries	Taylor et al. (1999)
The traditional method presents lowest chance for contractor's integration regarding design and construction	Ojo et al. (2011)

Some works exist on procurement in Nigeria. While some of the works have compared some procurement paths, others dwell on procurement selection and performance. Ogunsanmi, Iyagba and Omirin (2001) investigated the factors contributing to the performance of procurement path between the traditional method and the labour only method. Ojo (2009) investigated the performance of procurement types in Nigeria using the concept of performance indices. He acknowledged that the traditional procurement method is the most commonly used in the country, a position also supported by Babatunde, Opawole and Ujaddugbe (2010). Ojo (2009) further investigated a variant of the traditional method (lump sum contract method), management contracting method, design and build, build-own-operate-transfer. Idoro (2012) compared the performance of direct labour and design-bid-build construction projects in Nigeria. Using 130 projects comprising both direct labour and design-bid-build, the results indicate significant differences between direct labour and design-bid-build projects in terms of time overrun, but similarities in terms of cost overruns. In a work on design and build and traditional project procurement in Nigeria Ojo, Aina and Adeyemi (2011) concluded that design-and-build did not perform significantly better than design-bid-build.

Gaps in knowledge

Literature exists on opinions and criticisms of the traditional project procurement method in different parts of the world. Equally, some works have compared the traditional procurement method with respect to other methods, using some parameters. None of these works has aggregated the criticisms of the traditional method to ascertain or test empirically the opinions of two stakeholder groups – clients and consultants- about the procurement method, especially in Nigeria. It is this gap that is intended to be filled in this research. Herein lies the relevance of this work: bringing together and using a combination of issues for empirical assessment of stakeholder perceptions about traditional project procurement in Nigeria.

Materials and Methods

An examination of literature and recourse to anecdotal issues from practice were done to distil some issues for assessing the design-bid-procurement practice. The study involved the administration of questionnaires to construction industry organisations. The opinion survey questionnaires were administered on client and consulting organizations in Nigeria located in different states of Nigeria. The client organizations were either private or public, one-off or those that engage in construction on a continuous basis. The consulting organizations included consultancy firms offering services in the fields of architecture, building, engineering and quantity surveying. Construction industry professionals were targeted to complete the questionnaire on behalf of their respective client or consulting organizations. The professionals included architects, civil/ structural engineers, electromechanical engineers, quantity surveyors, land surveyors, estate surveyors, town planners and builders. By the peculiar nature of construction works, where projects and operational bases could be dispersed, most of the respondents were drawn from the city centres or state capitals. Responses for the questionnaires were received from ten states of Nigeria in addition to Abuja, the Federal Capital Territory.

The first part of the questionnaire sought to know the personal variables of the respondent supplying information for the organisation viz: age group of respondent, profession, grade of membership in professional body, highest educational qualification, and years of experience in construction industry or service. The second subdivision addressed organizational variables: head office location, number of employees, annual turnover range for the last five years where applicable, ownership structure of organization, age of organization in practice, frequency of commissioning of construction works, number of construction industry professionals present within or outside the organization, and what they do.

The questionnaire also required respondents to assess their agreement or otherwise with twenty issues itemised about design-bid-build project procurement documentation and practice. The

responses were inputted thus: 'strongly disagree' was assigned '1', 'disagree' was assigned '2', 'agree' was assigned '3', while 'strongly agree' was assigned '4'. The ratings or the values of 1 to 4 were deliberately assigned to exclude and to foreclose the position of neutrality and to make respondents to take a position. It was reasoned that this approach would force respondents to think through more than when the 'neutral' position or option is provided. It was also reasoned that in the process categorical outcomes are possible: either a respondent agrees or disagrees on an issue will be apparent.

The method used for the sampling was the purposive and snowballing technique. Many reasons account for this development. Respondents who were identified by/for the researcher to fall into the categories of either client or consulting organisations were contacted. Those respondents were then required to distribute the questionnaire to other layer of contacts known by the first set of contacts. The recourse to these non-probabilistic techniques was due to the fact that there was no available and reliable database of construction industry clients and consultants. . This line of reasoning was adopted in Li et al. (2005) who used convenience sampling due to lack of reliable database of the projects and subjects they were investigating. Furthermore the explanation of Kidder (1981) justified this method in that in some instances it is the only practicable and reliable way of getting required data. A set of 155 questionnaires was thus sent out to elicit responses on the subject under investigation. Responses were obtained from organisations with their head offices located in twelve states of Nigeria and Abuja, the Federal Capital Territory. 65 returned questionnaires, adjudged acceptable for analysis, were used. However, the head offices of the organizations were not indicated in about 6 percent of the returned questionnaires. The average response rate to the questionnaires was thus about 42%, which is judged acceptable in view of researches in same field (Li, Akintoye, Edwards & Hardcastle, 2005; Hoonakker, Carayon & Loushine, 2010). The response rate in this research is higher than the 29% and 12% respectively obtained by Hoonakker et al. (2010) and Li et al. (2005) which have been reported in construction and project management journals. Reluctance on the part of some respondents to supply relevant information was however encountered. Odusami (2001) had reported part or similar problems in research in the field of construction in a developing country like Nigeria.

The twenty items used in assessing perceptions about the traditional procurement method were gathered individually or severally from literature and practice. As those issues were collections of issues to be used newly in this investigation, it was judged necessary to test the items for both reliability and validity. While reliability measures the stability of an instrument, validity investigates the extent to which an instrument measures the hemisphere of a subject matter. The value of the parallel form reliability coefficient that also takes care of inter-item correlations, of 0.945 was obtained. This value was judged acceptable by the researcher in view of earlier studies addressing reliability by Kaming, Holt, Kometa and Olomolaiye (1998). The content validity was done through assessment of the instrument by experts in the environment of the research. The set level for statistical significance for all analyses was 5%.

Discussion of Results

Lagos State houses the head offices of the highest number of the organizations (with a frequency of 46 which translated to 69.7%) for the opinion survey instrument. Ondo, Kwara, Kogi, Anambra, and Abia states and Abuja each houses 1(1.5%). Enugu state houses 4 (6%) respondent organizations and Oyo, Enugu and Ekiti state houses 2 (3%) each of the projects. Head office locations showing states were not indicated by five respondents (7.6%). For the observation that Lagos State houses the head offices of the highest number of respondents, the possible explanation is that Lagos remains the commercial nerve center of Nigeria. Lagos state used to house the capital city of the Federal Government of Nigeria until 1991 when the seat of Government was moved to Abuja. The nature of construction business where a building product (unlike a manufactured product) does not necessarily have to be produced in the head office is another possible explanation. Construction products by their nature are immobile, but as far as location is concerned, they can be dispersed and scattered in different geographical locations. It should be noted therefore that the head office location of the project participants does not in reality signal a delimitation of their projects to such locations. Socioeconomic indicators also point to the population density with the attendant commercial and construction demand in and from the city centre.

Descriptive data analysis and results

Table 2 shows the response rate to the questionnaire.

Table 2: Response rate to the survey instrument

Questionnaire	Client organization Number (%)	Consultant organisation Number (%)	Total Number (%)
Received	32 (49)	33 (39)	65 (42)
Not received	39 (51)	51 (61)	90 (58)
Total	71 (100)	84 (100)	155(100)

Table 2 shows that the response rate by the client organizations to the questionnaire was 49% and that of the consultants' questionnaire was 39%. The aggregated response rate was 42%. Table 3 shows the classification of respondent organizations used in the study.

Table 3: Organisational classification of respondents to survey instrument

Organisation	Frequency	Percentage
Consultant	35	51.50
Client	32	48.50
Total	67	100.00

Consultant organizations represented 35(51.5%) of respondents while client organizations were 32 (48.5%). Table 4 shows the professional affiliation of respondents that completed the questionnaire on behalf of their respective organizations.

Table 4: Professional affiliations of respondents

Professionals	Consultant		Client			
	No.	% of group	No.	% of group	No.	% of the two groups
Architect	7	21.20	3	9.40	10	15.40
Builder	3	9.10	12	37.50	15	23.04
Civil/structural engineer	6	18.20	6	18.80	12	18.46
Mechanical engineers	2	6.10	2	6.30	4	6.15
Estate surveyors	7	21.20	3	9.40	10	15.40
Quantity surveyors	6	18.20	4	12.50	10	15.40
Dual or more professions	2	6.10	2	6.30	4	6.15
Total	33	100.00	32	100.00	65	100.00

Columns 2, 4 and 6 of Table 4 indicate the number of respondents while columns 3, 5 and 7 respectively indicate the associated percentages with respect to the total for that group. The table indicates that architects dominated the representatives of respondents that completed the supplied information for the respective consultant organization. For client organizations, civil structural engineers dominated.

Table 5 shows the highest academic qualifications of construction industry professionals who completed the questionnaire on behalf of their organizations.

Table 5: Highest academic qualifications of respondents

Qualifications	Consultant		Client		Total	
	No	% of group	No	% of group	No	% of the two groups
Masters	8	24.20	6	18.70	14	21.50
Bachelors	11	33.30	18	56.30	29	44.60
HND	12	36.40	8	25.00	20	30.80
ND	-	-	-	-	-	-
Not indicated	2	6.00	-	-	2	3.08
Total	33	100.00	32	100.00	65	100.00

HND = Higher National Diploma; ND = National Diploma

Table 5 indicates that Higher National Diploma holders - 12 (36.40%) - dominated the respondents representatives in the consultant group, while bachelors degree holders dominated in the client group. 14 (21.50%) of individuals who stood for their respondent organisations had masters degree while 29 (44.60%) had the bachelors degree. 20 (30.80) had the higher national diploma qualification while 2 (3.08%) did not indicate their highest educational qualification. On the whole, bachelors degree holders dominated respondents' representatives in the aggregated groupings. The insight that can be gained from the table is that not less than 96.10% of respondents have at least a degree or equivalent qualification. It can be argued that the strength of their understanding and responses could be better guaranteed.

Table 6 shows mean scores and rankings of the responses, the applicable rankings by the two groups and the aggregated mean scores and rankings.

Table 6: Mean scores and ranking of issues on design-bid-build procurement

Issue	MCS	RCS	MCL	RCL	AAI	COR
Individual participants are exploitative of loopholes in contract documents	2.45	5	2.81	1	2.63	1
Where sought at all, inputs of contractors are at best advisory	2.61	2	2.59	5	2.60	2
It encourages participants to be more profit conscious instead of client/customer conscious	2.45	5	2.72	2	2.58	3
it discourages cooperation and collaboration among project participants	2.39	10	2.66	3	2.52	4
It encourages claim consciousness among participants	2.76	1	2.28	16	2.52	4
It discourages innovation on part of contractors	2.39	10	2.63	4	2.51	6
There is uneven, unclear and unfair allocation of risks to some participants	2.55	4	2.34	11	2.45	7
It does not create a win-win situation among project participants	2.58	3	2.28	16	2.43	8
Seeking inputs of contractors is not mandatory but optional	2.42	7	2.41	7	2.42	9
Communication and transfer of useful knowledge among project participants is difficult	2.42	7	2.38	10	2.40	10
It encourages confrontation of persons instead of issues	2.30	15	2.50	6	2.40	10
It is more protective of clients than other participants	2.36	12	2.41	7	2.38	12
It does not encourage commitment to project objectives rather individual participants objectives	2.42	7	2.31	14	2.37	13
It engenders a climate of conflict among participants	2.30	15	2.41	7	2.35	14
It encourages professional mistrust and rivalry among participants	2.27	17	2.34	11	2.31	15
Detached objectivity of participants is doubtful- each is interested in what he can gain from the project	2.27	17	2.31	14	2.29	16
It increases exposure of participants to litigation	2.33	13	2.19	18	2.26	17
There is master servant relationship among participants	2.31	14	2.16	19	2.23	18
It does not encourage commitment of all participants to total quality right from project design	2.09	19	2.34	11	2.22	19
Relationships among participants breed mistrust	2.03	20	2.06	20	2.05	20

MCS= Mean score for consultants' group; RCR = ranking in consultants' group; MCL = Mean scores for clients' group; RCL = ranking in clients' group; AAI = aggregated Mean score of the two groups; COR = aggregated ranking of the two groups.

The table indicates the respective rankings by the respondent groups of the various issues used to assess the traditional procurement method. 'Individual participants are exploitative of loopholes in contract documents' was ranked most critical by the client groups while the same issue is ranked fifth by the consultant group. On the whole, for the issue, the aggregated rank is 1. The arithmetical approximation of the mean scores of the two groups indicates that the two groups agree individually with the issue that 'Where sought at all, inputs of contractors are at best advisory'. They are however assigned different ranks. The issue that was ranked least on the basis of mean scores is 'relationships among participants breed mistrust'. It should be recalled that the ordinal measure of mean scores is from 1 to 4. While the value of 1 implies 'strongly disagree', 2 implies 'disagree', 3 implies 'agree' and 4 is 'strongly agree'. The implication is that mean scores approximating 3 or 4 suggest that for a specific issue, mean score is indicating or suggesting the respondents' agreement with the statement or issue. The reverse is also true. The mean scores approximating 1 or 2 suggest that on the issue, the assessment of respondents is disagreement. In this context it is apparent that all

respondent groups including the aggregated group express disagreement with the last eight items or issues for assessment in the table.

Inferential data analysis and results

The mean scores for the issues by the respective respondent samples have been used for the ranking of the specific issues by the two groups. It is necessary to investigate and make inference about the population rank correlations. This is done by calculating the rank correlation between the two variables (i.e. the ranks being assigned by the two respondent groups) and then extending for the population. In this write-up, the Spearman's rank correlation coefficient for the sample is given by r_s while the rank correlation coefficient for the population from which the two samples were drawn is represented by ρ_s.

The analysis is done to calculate the rank correlation analysis for the sample and thereafter to test the significance of the calculated value for the population. The reason for extending the test of significance to the population, not just the samples, is to avoid the error of concluding that an association exists (or otherwise) between two variables if, in fact no such association exists (or otherwise) in the population from which these two samples were drawn. This is in tandem with the principle of sampling and rank correlation analysis as stated by Levin (1987).

In this regard, the following null and alternative hypotheses were set up:

Null Hypothesis (H_0): $\rho_s = 0$ (There is no significant correlation in the population on the ranks of issues regarding the design-bid-build procurement)

Alternative Hypothesis (H_1): $\rho_s \neq 0$ (There is significant correlation in the population on the ranks of issues regarding the design-bid-build procurement)

The analysis was carried out using the rank correlation analysis. The Spearman's rank correlation coefficient, r_s is calculated through the formula:

$$r_s = 1 - \frac{6\sum d^2}{n^2(n-1)}$$

Where

d = difference between the ranks of each pair of observations;

n = number of paired observations i.e. items being ranked in pairs

$\sum$ = notation meaning "the sum of".

In the present case n equals 20 and the calculated rank correlation coefficient for the samples is +0.2865. It is necessary to test the significance of this value with respect to the population.

For small samples of n (n less than or equal to 30), the distribution of r_s is not normal. As such it is not appropriate to use the t distribution for testing hypothesis about the rank correlation coefficient. As such, the table or distribution showing the values for r_s for values of n less than or equal to 30 with the respective levels of significance is used. In this research, n equals 20. The level of significance is set at 5%. Using the table of 'Values for Spearman's Rank Correlation (r_s) for combined areas in Both Tails' as presented in Conover (1971), the critical values for r_s are -0.4451 to + 0.4451. As the calculated value of 0.2865 is less than the critical value of +0.4451 for a two tailed test, the calculated value lies within the acceptance region. The decision is thus to accept the null hypothesis that there is no correlation and conclude that there is no association between the ranking of clients and consultants on the issues analysed for the design-bid-build procurement method in Nigeria.

Discussion

The findings from both the descriptive analysis and the inferential statistical analysis throw up some implications. Clients and consultants believe or agree that individual participants are exploitative of loopholes in the contract documents. This notion may be located in the context of the fact that the client is the employer or sponsor of the participants and projects respectively. Except in cases of risks that are transferred or shared with other project participants or other issues that arrangements have been made to eliminate or decrease risk exposure to the client, the client is at the receiving end of claims when presented by the other project participants. The groups as reflected in the table showing the descriptive analysis do not agree with some of the issues raised about the traditional project procurement practice and documentation. For example, none of the two groups agree with the issue that 'Relationships among participants breed mistrust'. This result is at variance with submission in literature (Wells, 1986; Garza et al., 1994; Odeh & Battaineh, 2002) that relationships among project participants are adversarial. Is this opinion suggesting that the traditional project procurement method is already perfected in Nigeria and as such respondents hold this opinion? Or is it that the two groups are just convenient with their past experience or tradition with the design-bid-build procurement? This issue warrants further investigation in another research.

The issues that the two groups concurrently agree with are: 'Individual participants are exploitative of loopholes in contract documents' and 'Where sought at all, inputs of contractors are at best advisory'; 'It encourages claim consciousness among participants.' The responses to the last eight items in each respondent organization and on an aggregated level suggest that consultants and clients do not agree individually with the issues. The issues include : 'It is more protective of clients than other participants'; 'It does not encourage commitment to project objectives rather individual participants objectives'; 'It engenders a climate of conflict among participants'; 'It encourages professional mistrust and rivalry among participants'; 'It encourages professional mistrust and rivalry among participants' 'Detached objectivity of participants is doubtful I- each is interested in what he can gain from the project'; 'It increases exposure of participants to litigation'; 'There is master servant relationship among participants'; 'It does not encourage commitment of all participants to total quality right from project design'; 'Relationships among participants breed mistrust'. An exhaustive discussion of each issue of assessment is not attempted here for space considerations, but the table has at least highlighted issues that the two project participant groups individually disagree with.

Additionally, consultants believe that the traditional method encourages claim consciousness among participants. The consultants then rank this as the highest weakness of the traditional method. On the other hand, clients rank 'individual participants are exploitative of loopholes in contract documents' as the highest. While it can be argued that not all clients are expert and experienced clients, consultants on the other hand are recognized and acknowledged experts in their field. Consultants' opinions should ordinarily matter based on their expertise. However this perception can be coloured by the fact that the consultant too is hired by the client: the consultant has a contract with the client and may also have her organizational or professional loyalty different from or independent of that the client. The client on the other hand, irrespective of exposure, picks the bills. The project exists, because of, not in spite of him. Furthermore, his views matter. Idoro (2012) averred that project objectives are drawn from client's goals and briefs. Furthermore, the most important person to look for his satisfaction is the client. While a satisfied client may not necessarily guarantee automatic or continued patronage, a dissatisfied client or customer will result in loss of patronage. Whether these opinions are right or wrong for each group to hold is not the intention of this work, rather it is to know those opinions and to possibly understand the underlying reason. One observation or possibility is that the two groups may have assessed the procurement method based on their experience. The analysis in Table 7 can thus be interpreted as an audit of the experiences or perspectives of the two stakeholders. Their experience may have coloured their perception. It is not the purpose of this work to indicate that an opinion is wrong or otherwise, however the purpose is to present an image or experience audit of stakeholders about the traditional procurement and also see whether these opinions depart from literature position. Furthermore one issue too that comes up on the traditional method criticism in literature is: are these criticisms having anything to do with client roles? This is an area that warrants examination in future research. The research finding has an ally in the work of Erikkson (2008) where empirical results do not match literature arguments or presentations.

Using the principle of arithmetical approximations to the nearest whole numbers consultants agree with the items ranked 1 to 5 under the column 'RCS'. Those items approximate to 3 which connote 'agree'. The items for the consultants are consecutively, that: the traditional method encourages claim consciousness among participants; where sought at all, inputs of contractors are at best advisory; the traditional method does not create a win-win situation among project participants; there is uneven, unclear and unfair allocation of risks to some participants; individual participants are exploitative of loopholes in contract documents; and, the method encourages participants to be more profit conscious instead of client/customer conscious. For clients, the items ranked 1 to 5 are respectively: individual participants are exploitative of loopholes in contract documents; the method encourages participants to be more profit conscious instead of client/customer conscious; the method discourages cooperation and collaboration among project participants; the method discourages innovation on part of contractors; and where sought at all, inputs of contractors are at best advisory. Clients also, by approximation agree with the sixth item: the traditional method encourages confrontation of persons instead of issues. The implication of the assessment is that the opinions held by or the statements agreed to by either clients or consultants tally with literature position on similar or respective criticisms or conclusions about the traditional project procurement method done by Wells (1986), Ofori (1990), Garza et al. (1994), and De-Valence and Houn (1999). Additionally, there are several issues in the table (Table 7) that have emanated from literature to which the clients or consultants do not agree. They are issues whose mean scores do not approximate to 3. For consultants the issues are ranked 7 to 20. For consultants the issues are ranked 7 to 20 too. Interestingly, however both clients and consultants disagree with the statement that relationships among participants breed mistrust. The issue was ranked least i.e. 20th. This assessment suggests

that the traditional method, as perceived by the two stakeholders, does not breed mistrust. It also suggests that mistrust among project participants is not seen as problem of the traditional method.

The inferential statistical analysis also indicates that there is no correlation in the ranks of clients and consultants on the traditional project procurement practice. This has an implication that the two groups do not see the traditional project procurement the same way. The practice implication is that while the consultant is presumed to be an advisor to the client in the procurement processes, their perceptions on the traditional procurement practice does not tally. This becomes a challenge: to manage and integrate each other's perception for the good of the project. Stakeholder management regarding the procurement method thus becomes necessary; if it is not done there may be unintended negative project results.

Conclusion and Recommendations

The outcome of this research indicates that clients believe or agree that 'individual participants are exploitative of loopholes in the contract documents' and rate it first among issues on traditional project procurement. Clients rate this issue first. Consultants on the other have the opinion that the traditional project procurement practice encourages claim consciousness among participants and rank it as the most important issue. Opinions that consultants agree with, which also tally with literature position about the traditional method, are: the method encourages claim consciousness among participants; where sought at all, inputs of contractors are at best advisory; the method does not create a win-win situation among project participants; there is uneven, unclear and unfair allocation of risks to some participants; individual participants are exploitative of loopholes in contract documents; the method encourages participants to be more profit conscious instead of client/customer conscious. For clients the opinions they agree with in line with literature position are: individual participants are exploitative of loopholes in contract documents; the method encourages participants to be more profit conscious instead of client/customer conscious; the method discourages cooperation and collaboration among project participants; the method discourages innovation on part of contractors; where sought at all, inputs of contractors are at best advisory; and the traditional method encourages confrontation of persons instead of issues. Furthermore, some of the findings of the research do not match or agree with some issues raised in literature about the traditional project procurement practice. Additionally, there is no correlation in the assessment or ranking of the issues on traditional project procurement by the two clients and consultants. This suggests that the two groups see the traditional procurement method differently. The implication is that while the consultant is presumed to act as an advisor to the client in the procurement process, their perceptions do not tally. This development in perception has the possibility of affecting project objectives. It is recommended that efforts should be made to engage in appropriate stakeholder management of the two groups regarding the traditional procurement process. Furthermore, there may be need to explore the organizational development of the two groupings and any other underlying factors accounting for lack of concurrence of views.

References

Adegbile, M.B.O., Dada, M.O., Iyagba, R.O.A., & Nubi, T.O. (2001). Construction cycle: The Nigerian experience. *Professional Builder*, *July,* 25 – 43.

Adegoke, O.J., Olaleye, A., & Araloyin, F.M. (2010). An examination of the need for public-private-partnership in the provision of urban infrastructure in Lagos metropolis. *Ife Journal of Environmental Design and Management,* 4(1), 66-82.

Ameh, J., & Odusami, K.T. (2007). Nigerian building professionals' ethical ideology and perceived ethical judgment, *Construction Research Journal,* 2 (1), 32-42.

Babatunde, S.O., Opawole, A., & Ujaddugbe, I.C. (2010). An appraisal of project procurement methods in the Nigerian construction industry. *Civil Engineering Dimension,* 12(1), 1-7.

Conover, W. J. (1971). *Practical Nonparametric Statistics,* New York: John Wiley and Sons.

Dada, M. O., & Oladokun, G. B. (2008). Critical success factors in public-private-partnership projects in Nigeria: A perceptual Survey. In Karter, C., Ogunlana, S.O., & Kaka, A. (Eds). *Transformation through construction: Joint 2008 CIB W065/055 Symposium proceedings* (pp. 1-10)*,* Edinburgh: Herriot Watt University.

Dada, M. O. (2007). Priorities in Nigerian public project implementation: Expectations from consultants and contractors. *Construction Research Journal,* 1(1), 10-14.

Dada, M. O. (2004). *Teambuilding procurement method, selection and project performance in some selected states in Nigeria*, Unpublished PhD thesis submitted to the School of Postgraduate Studies, University of Lagos, Lagos.

De-Valence, G., & Houn, N. (1999) Procurement strategies. In Best, R and De-Valence, G. *Building in value.* Australia: Arnold and the Contributors.

Erikkson, P.E. (2008). Procurement effects on coopetition on client contractor relationships, *Journal of construction Engineering and Management,* 134(2), 103-111.

El-Gohary, N.M., Osman, H., & El-Diraby, T.E. (2006). Stakeholder management for public private partnerships. *International Journal of Project Management,* 24, 595-604 .

Garza, J.M., Alcantara, P., Kapoor, M., & Ramesh, P.S. (1994).Value of concurrent engineering for AEC industry. *Journal of Management in Engineering, 10*(3), 46 -55.

Flemming, Q.W., & Koppleman, J.M. (1997). Integrated project development teams: Another fad or…. a permanent change. *Project Management Journal, 28*(1), 4 – 11.

Forrer, J., Kee. J.E., & Newcomer, K.E. (2010). Public Private Partnerships and the public accountability question. *Public Administration Review,* May/June, 475-484.

Freeman-Bell, G., & Balkwill, J. (1993). *Management in Engineering: Principles and Practice*. UK: Prentice Hall International

Gordon, C.M. (1994). Choosing appropriate construction contracting method. *Journal of Construction Engineering and Management,* 120 (1), 196 – 210.

Hoonakker, P., Carayon, P., & Loushine, T. (2010). Barriers and benefits of quality management in the construction industry: An empirical study. *Total Quality Management,* 21 (9), 953-969.

Idoro, G.I. (2012). Comparing the performance of direct labour and design-bid-build construction projects in Nigeria, *Journal of Civil Engineering and Management,* 18(2), 184-196.

Idoro, G.I. (2007). A comparative evaluation of health and safety performance of indigenous and multinational construction firms in Nigeria. *Construction Research Journal,* 1(1), 65-75.

Idoro, G.I., Iyagba, R.O.A. & Odusami, K.T. (2007). Evaluation of the use of design-bid-build procurement system in the Nigerian construction industry. *Construction Research Journal* 1(1), 15-25.

Kaming, P. F., Holt, G. D., Kometa, S.T., & Olomolaiye, P. O. (1998). Severity diagnosis of productivity problems – A reliability analysis. *International Journal of Project Management,* 16(2), 107 –113.

Kozlowski, S.W.J., & Ilgen, D.R. (2006). Enhancing the effectiveness of workgroup and teams, *Psychological Science in the Public Interest,* 7 (30) 77-124.

Kuprenas, J. A., & Nasr, E. B. (2007). Cost performance of two public sector project procurement techniques, *Journal of Management in Engineering,* 23 (3), 114-121.

Lee-Kenley, L. (2006). Locus of control and attitudes to working in virtual teams. *International Journal of Project Management,* 24, 234-243.

Levin, R. I. (1987). *Statistics for managers.* (4th ed.). New Delhi: Prentice Hall of India Private Limited.

Li, B., Akintoye, A., Edwards, P.J., Hardcastle, C. (2005). Critical success factors for PPP/PFI projects in the UK construction industry. *Construction Management and Economics,* 23, 459 – 471.

Li, T.H.Y. Ng, S.T., & Skitmore, M. (2012). Conflicts or consensus: An investigation of stakeholder concerns during the participation process of major infrastructure and construction projects in Hong Kong, *Habitat International,* 36, 333-342.

Ling, Y. N., Ofori, G., and Low, S. P. (2003). Evaluation and selection of consultants for design-build projects. Project *Management Journal,* 34 (1), 12 – 22.

Masterman, J.W. E. (1992). *Introduction to procurement systems.* London: E & FN Spon Ltd.

McDermott, P. (1999). Strategic and emergent issues in construction procurement. In S. Rowlinson., & P. McDermott (Eds.), *Procurement Systems: A guide to best practice in Construction* (pp. 3 – 26). London: E & FN Spon Ltd.

Miles, R. S. (1996). Twenty first century partnering and the role of the ADR. *Journal of Management in Engineering, 12*(3), 45-55.

Murray, M., Langford, D., Hardcastle, C., & Tookey, J. (1999). Organisational design.In S. Rowlinson., & P. McDermott (Eds.). *Procurement systems: A guide to best practice in construction* (pp. 83 – 118). London: E & FN Spon Ltd.

Naoum .S.G. (2003). An overview of the concept of partnering, *International, Journal of Project Management*, 21(1), 71-76.

Newcombe, R., Langford, D., & Fellows, R. (1990). *Construction management: Organization systems.* London: Mitchell Publishing Co. Ltd.

Nubi, T.O. (2003), Construction procurement: Need for paradigm shift. *Building Quarterly*, 1(10), 17-27.

Odeh, A.M. & Battaineh, H.T. (2002). Causes of construction delay: Traditional contracts. *International Journal of Project Management,* 20(1), 67-73.

Odusami, K.T. (2001). *Project team leadership and construction project performance in some selected states of Nigeria* Unpublished PhD Thesis. University Of Lagos, Lagos.

Ogunlana, S.O. (2010, February), "Sustaining the 20:2020 vision through construction: A stakeholder participatory approach", *Distinguished lecture Series of the School of Postgraduate Studies, University of Lagos, delivered on February 10, 2010.*

Ogunsanmi, O.E., Iyagba, R.O.A., & Omirin, M.M. (2001), "Modeling procurement performance in housing projects in Nigeria." *The Lagos Journal of Environmental Sciences,* 3(1), 16-35.

Ogunsanmi, O.E., Salako, O.A., & Ajayi, O.A. (2011). Risk classification model for design-and-build projects. *Journal of Engineering, Project and Production Management,* 1(1), 46-60.

Ojo, S.O. (2009). Benchmarking the performance of construction procurement methods against selection criteria in Nigeria. *Civil Engineering Dimension,* 11(2), 106-112.

Ojo, O.S., Aina, O., & Adeyemi, A.Y. (2011). A comparative analysis of the performance of traditional contracting and design-build procurements on clients objectives in Nigeria, *Journal of Civil Engineering and Management,* 17(2), 227 – 233.

Othman, A.A.E. (2011). Improving building performance through integrating constructability in the design process, *Organisation, Technology and Management in Construction: An International Journal,* 3 (2), 333 – 347.

Rahman, M. & Kumarawamy, M. (2002). Joint risk management through transactionally efficient relational contracting. *Construction Management and Economics,* 20 (1), 45-54.

Rowlinson, S. (1999), Selection criteria. In Rowlinson, S., and McDermott, P. (Eds.) *Procurement systems: A guide to best practice in construction*, London, E & FN Spon Ltd., pp. 276 – 299.

Smith, G. E., & Nagle, T.T. (1995). Frames of reference and buyers' perception of price and value. *California Management Review* 38(1), 98 – 116.

Sarmento, J.M. (2010). Do PPPs create value for money for the public sector? The Portuguese experience. *OECD Journal on Budgeting*, 2010/1, 93-119.

Smyth, H. & Edkins, A. (2007). Relationship management in the management of PFI/PPP projects in the UK. *International Journal of Project Management,* 25, 232 – 240.

Taylor, R.G., Norval, G.H.M., Hindle, B., Rwelamila, P.D., & McDermott, P. (1999). From conventionally orientated to developmentally orientated procurement systems: experiences from South Africa, In S. Rowlinson., & P. McDermott (Eds.). *Procurement systems: A guide to best practice in construction* (pp. 163-183). London: E & FN Spon Ltd.

Tsai, J., & Chi, C. S. F. (2009). Influences of Chinese cultural orientations and conflict management styles on construction dispute resolving strategies. *Journal of Construction Engineering and Management,* 135 (10), 955-964.

Weaver, R.L. (1981). *Understanding interpersonal communication*. US: Scott Freeman and Co.

Wells, J. (1986). *The construction industry in developing countries: Alternative strategies for development.* London: Croom Helm Ltd.

Yinghui, B., & Eng, G. C. (1999, October). *The impact of organizational structure on project performance.* Paper presented at the 1st Conference On CIB TG29 on Construction in Developing Countries The Pan Pacific, Singapore.

Yuan, J., Skibniewski, M.J., Li, Q., & Zeng, L. (2010). Performance objective selection model in public-private-partnership projects based on the perspective of stakeholders. *Journal of Management in Engineering,* 26 (2), 89-104.