

## EFFECT OF CONTRACTUAL RISKS ON BUILDING CONTRACTS IN ABUJA, NIGERIA

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Construction project activities are carried out by different parties and each of the activities has its risk which results in cumulated associated risk for the project under different circumstances. They are mostly influence to contractual risks which occur as a function of contract provisions and clauses. This study aims to examine the effect of contractual risks on building contracts with a view to suggesting strategies for minimizing the likelihood of occurrence of the risks factors. In order to achieve this aim, 35 potential risk factors were identified from standard form of contracts. Data were collected through questionnaires distributed to consulting and construction firms in Abuja. Analysis of data was using Mean Item Score and T- test. The observed P value of 0.458 was greater than 0.05. Findings revealed that there is no significant difference between the perception of consulting and construction firms on the level of awareness of the contractual risk factors. It was concluded that Contractor and consultant have adequate knowledge of risk and their sources in building contract. The study however recommended that risk management should be integrated into project management processes to improve building contract in Abuja.

**Key words:** Building contract, Contractual risks, Potential risk, Risk management.

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### INTRODUCTION

Risk is inherent in all human endeavors and construction projects are no exception as they involve activities that are prone to different type of risks (Opunsanmi, *et al.* 2011). When comparing construction industry to other industries, it is subject to risk and uncertainty due to the unique features of construction activities (Smith, 2003). Project activities are also carried out by different parties and each of the activities has its own risk, which results in cumulated associated risk for the project (Al-Sobiei, 2005). Haseeb *et al.* (2011) opined that risks affect construction sector negatively and focusing on risk reduction measures is important. However, it has been criticized for its expensive and wasteful nature, low productivity, quality problem and project delay. The reasons for all these are as varied, diverse and complex as the products of this industry itself. The process of developing a project from initial investment appraisal to completion and into use is complex (Flanagan and Norman, 2003).

Project Management Institute (PMI) (2012) and Association for Project Management (APM) (2012), defines risk as an uncertain event or condition that, if it occurs will have either a positive or negative effect on the objective, which are usually cost, time, scope and quality project.

Previous research on contractual risks in construction projects focused on risks identification, impact of risks on project delivery, and risks management strategies in public private partnership projects (Almad *et al.*, 2007; visser and josbert, 2008; Makui *et al.* 2009; Ehsan *et al.* 2010; Ojo, 2010; Fong, 1987; Thomas and Bone, 2002; Al-Bahar and Crandell, 1999; Rathery, 1999).

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It has become imperative to critically address the factors that influence contractual risks on Building contract in Abuja, Nigeria in order to ascertain not just their sources but also their degree of intensity or severity. These research works however failed to identify factors that affect contractual risks on building contracts and there is little understanding of the implication of these factors as they influence contractual relationship between parties to contract as it relates to their obligations and duties within the confines of contracts. Hence, the focus of the study is to examine the effect of contractual risks on building contracts with a view to suggesting strategies for minimizing likelihood of occurrence of the risks factors. In order to achieve this aim, 35 potential risk factors were identified from standard form of contracts and objective is to compare the level of awareness of various contractual risks among consulting and construction firms in Abuja. The hypothesis of the study which is in line with the objectives states that: the perception of consulting and construction firms on the level of awareness of contractual risk factors does not differ significantly.

### Risks in Construction Projects

Risk is a challenging concept to define, understand and ultimately to manage. This is primarily because risk often means different things to different people. Historically, risk is defined as the possibility that the actual input variable and the outcomes may vary from those originally estimated (Correia *et al.*, 1989; Remenyi *et al.*, 1993). This implies that the extent of the possible difference between the actualities and expected value reflects the magnitude of the risk. Although the word 'risk' is usually used in the context of a potential hazard or the possibility of an unfortunate outcome resulting from a given action (Correia *et al.*, 1989), intrinsically risk may be either positive or negative.

Risk in construction has been the object of attention because of time and cost over-runs associated with construction projects. Although, Porter (1981), Healey (1982) and Perry and Hayes (1985) have expressed risk as an exposure to economic loss or gain arising from involvement in the construction process; Mason (1973) and Moavenzadeh (1976) have regarded this as an exposure to loss only. But Bufaied (1987) in his work describes risk in relation to construction as a variable in the process of a construction project whose variation results in uncertainty as to the final cost, duration and quality of the project.

The development of a construction project is fraught with enormous risks; this is due to the uniqueness of every project, the uncertainties introduced by the project stakeholders, statutory or regulatory protocols and other intrinsic and extrinsic constraints. The general consensus in current literature in the field of risk management incorporates four core steps in the process of risk management (Thomas and Bone, 2002; Al-Bahar and Crandell, 1999; Raftery, 1999). These are:

- i. Risk identification
- ii. Risk analysis
- iii. Risk response
- iv. Risk monitoring

Studies carried out by Akinloye and McLeod (1997), Olatunji (2007) Onukwuba *et al.* (2009) and Tang (2009) identified some risks contractors are commonly exposed to while executing contracts. These risks are grouped into; Contractual, Political, Performance, Financial, Technical and Environmental risks.

Of the above mentioned classifications, contractual risks have been recognized from literature to have the most adverse consequences on the successful completion of construction. Akinloye and McLeod (1997) revealed that "more premiums are applied on contractual risk than other forms of risk", because Contractual risks are associated with flaws in documents, inappropriate documents, or improper contractual relationship. The consequences of this risk are claims and dispute, disruption of work, stoppages of work, lack of co-ordination, delays and inflated costs (Bufaied, 1987). Contractual risks are also found to be the most encountered by contractors from the study of Olatunji (2007). He found out that "Contracts are mostly breached in respect of parties not fulfilling the terms of the contract as stated in the Standard forms of building contract", thereby resulting in project duration extension or otherwise.

The following in Table 1.1 are potential risks factors drawn from the clauses in the standard forms of building contracts that relate to the parties to the contract in respect of their obligations and duties that could act as contractual risks.

**Table 1 Potential Risk Factors and their classes**

Risk Factor No.	Potential Risk Factors	JCT 2005 Clause	SFBC 1998 Clause
RF 1	Delay in obtaining access to site	2.4.3,3.16,2.20,3	21.1
RF 2	Scope of work not properly defined	2.15,2.16	3.4
RF 3	Inadequate or insufficient site information	2.12	3.1,3.3,3.4
RF 4	Urgent or unsuitable program of work	2.17	1.3
RF 5	Misrepresentation of contract conditions	2.12	12
RF 6	Delay in setting out of the works	2.10	5
RF 7	Defective/incorrect design	2.14,2.15,2.20,2.19	12
RF 8	Changes in the design	2.12	6
RF 9	Discrepancies in drawings and specifications	2.16, 2.15, 2.20	3.31
RF 10	Drawings and documents are not issued in time	2.9,2.12	3.2
RF 11	Increase to the scope of work	2.7,2.17	6.4
RF 12	Scope of work differs from contract	2.7,3.18	12
RF 13	Adjustment to the completion time of project	2.28,2.29	25
RF 14	Incompleteness to necessary contract documents	2.8,2.9, 3.1,3.3,	3.4
RF 15	Discrepancies in the Bill of Materials	2.13	12
RF 16	Contract documents used other than the purpose of the contract	2.4.12	3.7
RF 17	Interference in the progress of work	3.35	161
RF 18	Imposing of subcontractors	3.15	271
RF 19	Imposing of suppliers	3.9	281
RF 20	Assigning part of the work without consent	2.35,7.1, 16.1,	171
RF 21	Third party nomination without consent	3.3	271
RF 22	Delay in resolving disputes	9.2	351
RF 23	Delaying in issuing and responding to instruction	2.17,2.27	2.3,1.2,3.2,1.2
RF 24	Verbal instructions not backed by writing	3.12,3.13	2.3
RF 25	Delay in making interim payment	4.11,4.13	301
RF 26	Delay in issuing interim certificate	2.30,4.9	301.1
RF 27	Failure to honour claims	5.5	
RF 28	Delay in making interim valuations	4.11	301.1
RF 29	Delay in issuing final certificate	4.15,1.10	15.1,30.5
RF 30	Delay in making final payment	4.15	30.6
RF 31	Addition of unreasonable taxes and charges to contract sum	4.6	4.2
RF 32	Failure to write instruction regarding variation	3.2.1	11.3
RF 33	Failure to reimburse for direct loss and expenses	4.25	11.8,24
RF 34	Determination of contract	8.2	261
RF 35	Retention money not returned	4.10,4.18,4.20	161.6

Source: JCT 2005 &amp; SFBC 1998

### Stakeholders Perception on Contractual Risk

According to Othman and Harinarain (2011), as soon as the client and the contractor have signed a contract they have taken on board risks. Their awareness of the risk, and the steps they have taken to minimize their share of the risk, will determine the likelihood of a problem occurring. Risks are spread through the whole project life cycle and many risks occur at more than one phase, with the construction stage as the most risky phase. It is concluded that clients from the feasibility phase onwards to address potential risks in time, and contractors with robust construction and management knowledge must be employed early to make sound preparation for carrying out safe, efficient and quality construction activities (Zou *et al.* 2006). And risks are inherent in construction production components which affect production cost and overall project cost (Al-Momani, 2000). Project activities consume resources during production or execution and the successes of any project is attributed to the adequate provision of the necessary resources and are major considerations the contractors put first during pricing (Warsame, 2006; Onukwube *et al.* 2009; Chikara, 2008; Rahman *et al.* 2013).

Production cost constitutes a major aspect of the overall construction project cost. Bertelsen and Nielsen (1997) assert that most cost in construction is experienced in the execution phase with about 85 percent is consumed while the remaining 15 percent goes for management and supervision. Finding from Ibrahim *et al.* (2010) and Skoyles (2000) revealed that materials account for 50-65% of the total project cost in construction projects while Shashank *et al.* (2014) and Hanna *et al.* (2005) opined that labour costs comprise 30 % to 50 % of overall project cost. The contractors and consultants have not given adequate attention to evaluate the risk factors associated with production cost estimate and this is one of the major reasons why the overall project costs are hardly stable in the construction industry (Eimmannal and Anjiba 2015).

The study of Emmanuel and Anjiba (2015) shows that there is no significant difference between the perception of contractors and consultants concerning the risk factors in building projects, which admit a high level of agreement between the perception of contractors and consultants. Contractors and Consultants must work cooperatively from the feasibility stage **onwards to address potential risk in time, and contractors' robust construction and management knowledge must be employed early to make sound preparation for delivery of an efficient and quality construction program** (Luka and Ibrahim 2015).

In the studies carried out by Akinloye and McLeod (1997), the perception of risk by contractors and project managers in UK revealed that contractors perceived risk as Factors which can adversely affect the successful completion of a project in terms of budget and schedule which in themselves are not always identifiable. The likelihood of physical, contractual or economic conditions becoming more difficult than those allowed for in the price, loss of money, loss of reputation, and a chance of an accident occurring to persons on property. The degree of certainty that the financial objectives for each particular project will be achieved and the extent to which risk factors can be quantified at bid stage and monitored closely. Tender or on-site performance mistakes leading to quality underperformance, cost over-run and an impact on all of these from a variety of unforeseen circumstances etc. while Project managers perceive risk as the activities/occurrences which traditionally are likely (or to some degree will happen) to happen, and to have an adverse effect upon programme and/or cost, uncertainty with regard to events and their effects which affects the project outcome in terms of cost, time, quality and any other relevant performance criteria and something to be avoided or transferred.

Zaifu *et al.*, (2012) discovered that Contractors perceive risk as those factors that jeopardize their abilities to meet predefined project scope, cost and time and risks are depicted as any event that has a negative effect on their operations, they also identified tight project schedules, inaccurate estimating, poor project management, resource incompetence, inadequate safety measures and unsafe operations, **subcontractor's inexperience and excessive bureaucracy** as risk factors while performing contracts in the Niger Delta area in Nigeria.

Furthermore in a study carried out in Palestine by Eshassi *et al.*, (2008), Contractors perceived financial failure and working at hot (dangerous) areas to be the most important construction risks followed by border closure while the least important risk, from the **contractors' perspective is the risk of new governmental acts followed by the risk of rushed bidding process** in building projects in Palestine.

It is generally recognized that those within the construction industry are continually faced with a variety of situations involving many unknown, unexpected, frequently undesirable and often unpredictable factors (Fong, 1987). Ashley (1977) and Kangari and Riggs (1989) have all agreed that these situations are not limited to the construction industry; it is recognized that risk is built into any commercial organization's profit structure and is a basic feature of a free enterprise system.

In managing construction project risks, determining the types of project risks and classifying it into several groups in which it belongs is a fundamental step as it could enable the assessment process to be carried out later on in determining the level of each risks and the severity effects of it in a project undertakings. Early risk identification ensures that team **effort is concentrated in critical areas, focusing the project team's attention on actions and resources** where there is a major risk exposure, or where the greatest time and cost savings can be made through streamlined project management.

Managing construction project risks from the beginning will contribute to early risks response where problems are reduced as they are identified, it is therefore different from the traditional approach in project management whereby risks are responded only when problem occurs. This is not good as it will incur a lot of time and cost as well as effect.

## RESEARCH METHODOLOGY

A survey design approach was employed in this study with quantitative data gathered from respondents. The research population constituted registered Quantity Surveyors working in construction companies and Quantity Surveying consulting firms within Abuja, the federal

capital territory. The rationale for this selection is due to their (QS) involvement in the preparation of valuation and payment certificate. Abuja was selected for this study because it is the administrative headquarters of Nigerian; it is one of the metropolitan cities in Nigeria that has the highest population of built environment professionals and has many ongoing construction projects.

In order to guarantee equal representation for each of the identified groups/strata in the population, stratified random sampling method was adopted. The respondents were first categorized into different strata before they were selected and randomly sampled accordingly.

It is clear from Table 1 that the sample frame for the study included: 81 Quantity surveying firms and 79 construction firms making up a total of 160 respondents. These value (160) was subjected to Dorothy (2008) sample size computation. The value was reduced to a minimum of 81. **10%** confidence interval was selected for the study, showing that 81 is the minimum number of questionnaires that can be administered within the population.

**Table 1: Sample frame of the study**

Respondent	Total number of questionnaire administered	Total number of questionnaire returned
Quantity surveying firms	81	41
Contractors (POCI Registered)	79	40
<b>Total</b>	<b>160</b>	<b>81</b>

Source: NQS & POCI (2016).

The collected data were analysed by using the descriptive method (Mean Item Score). Data processing was done with the aid of Statistical Package for social sciences (SPSS) software. The MIS was used to determine weighted mean average of the identified measured and the premise of decision for the ranking is that the factor with the highest MIS is ranked 1<sup>st</sup> and others in such subsequent descending order. In order to determine the statistical significant differences between mean of various group of respondents (Quantity Surveyors), the T-TEST was used to analyse the differences. The level attached to the possible effects on Level of awareness of various contractual risks among consulting and construction firms.

## RESULTS AND DISCUSSIONS

### Perception of Contractual Risks Factors between Consulting and Construction Firms

The study compare the perception of consultant and construction firms on the level of awareness of various contractual risks on the building contract. A total of 35 risk factors were identified from literature as the common factors that influence contractual risks on building contract. The consulting and construction firms were asked to rank these factors according to the extent they perceived the influence of the factors on the level of awareness. The mean and the rank of each factor were calculated based on the construction and consulting firm's perceptions in Abuja and the result of the comparison is shown in Table 2.

The result of the analysis shown in Table 2. Finding revealed that based on the consulting firm perceptions, Verbal instructions not backed by writing was ranked highest with the mean score of 4.475, followed by Assigning part of the work without consent and Imposing of subcontractors with mean scores of 4.400 and 4.225 respectively. Delaying in issuing and responding to instruction, Delay in interim payment and Delay in issuing interim certificate were ranked next with mean scores of 4.200, 4.150 and 4.125 respectively, while Drawings and documents are not issued on time, Increase in the scope of work and Delay in obtaining access to site ranked seventh, eighth and ninth with mean scores of 4.100, 4.050 and 3.975 respectively. Contract documents used other than the purpose of the contract and Delay in final payment were the factors ranked least by consulting firm with the same mean score of 2.725 but difference standard deviation respectively. This indicates that these factors do not have significant influence on building contract in regard to the level of awareness. Other factors ranked by the consulting firm based on their perceptions are between these extremes as shown in Table 2.0. This shows that contractors perceived Verbal instructions not backed by writing and Assigning part of the work without consent as major factors influence contractual risk on level of awareness which may eventually result to dispute, poor quality of work, delay and disruption of work.

In order to compare the perceptions of construction firm in regard to level of awareness of contractual risk on building contracts, 35 risk factors were also identified from extensive literature were ranked by the construction firm based on their perceptions of the level of awareness of contractual risks on building contract. The result of the analysis is presented in Table 4.11. The results revealed that Delay in final payment was ranked the highest factor influence contractual risks as per level of awareness with mean score of 4.600, followed by Delay in issuing final certificate with mean score of 4.550, Delay in issuing interim certificate and Discrepancies in drawings and specifications were ranked 3<sup>rd</sup> and 4<sup>th</sup> with mean score of 4.525 and 4.475 respectively. The factors ranked 7<sup>th</sup> and 8<sup>th</sup> were Discrepancies in the Bill of Quantities and Drawings and documents are not issued on time with mean score of 4.69 and 4.225 respectively. The factor ranked least among the factors influence contractual risks as per level of awareness as identified in this study based on construction firm perception is Unfair or unrealizable program of work with mean score of 2.500. Other factors ranked by the construction firm based on their perceptions are between these extremes as shown in Table 2.0. The results from Table 4.11 also indicate that the construction firm perceived Delay in final payment, Delay in issuing final certificate and Delay in issuing interim certificate. The results also informed that when the financial need of the project is not aligned with the project milestone, it can lead to stoppage which has both cost and time implications on the project.

**Table 2: Perception of Contractual Risk Factors between Consulting and Construction Firms**

S/NO	Risk Factors	Consulting Firms			Construction Firms		
		Mean Score	StdDev	Rank	Mean Score	StdDev	Rank
1	Verbal instructions not backed by writing	4.475	0.632	1 <sup>st</sup>	3.975	0.821	12 <sup>th</sup>
2	Assigning part of the work without consent	4.400	0.860	2 <sup>nd</sup>	2.725	0.806	32 <sup>nd</sup>
3	Imposing of subcontractors	4.225	0.851	3 <sup>rd</sup>	2.770	1.376	31 <sup>st</sup>
4	Delaying in issuing and responding to instruction	4.200	0.748	4 <sup>th</sup>	4.275	0.547	6 <sup>th</sup>
5	Delay in interim payment	4.150	1.014	5 <sup>th</sup>	4.475	0.499	5 <sup>th</sup>
6	Delay in issuing interim certificate	4.125	0.871	6 <sup>th</sup>	4.525	0.632	3 <sup>rd</sup>
7	Drawings and documents are not issued on time	4.100	0.735	7 <sup>th</sup>	4.225	0.418	8 <sup>th</sup>
8	Increase in the scope of work	4.050	0.775	8 <sup>th</sup>	3.830	0.691	16 <sup>th</sup>
9	Delay in obtaining access to site	3.975	0.689	9 <sup>th</sup>	3.025	1.351	25 <sup>th</sup>
10	Delay in resolving disputes	3.800	1.030	10 <sup>th</sup>	3.900	0.663	14 <sup>th</sup>
11	Retention money not returned	3.800	0.843	11 <sup>th</sup>	2.775	0.508	30 <sup>th</sup>
12	Delay in making interim valuations	3.675	0.818	12 <sup>th</sup>	4.125	0.599	9 <sup>th</sup>
13	Adjustment to the completion time of project	3.525	1.000	13 <sup>th</sup>	3.425	1.138	22 <sup>nd</sup>
14	Imposing of suppliers	3.475	1.024	14 <sup>th</sup>	2.550	1.284	34 <sup>th</sup>
15	Misrepresentation of contract conditions	3.475	0.866	15 <sup>th</sup>	3.075	0.905	24 <sup>th</sup>
16	Defective/incomplete design	3.475	0.632	16 <sup>th</sup>	3.830	0.792	15 <sup>th</sup>
17	Scope of work not properly defined	3.450	1.264	17 <sup>th</sup>	2.825	1.430	29 <sup>th</sup>
18	Discrepancies in drawings and specifications	3.425	0.771	18 <sup>th</sup>	4.475	0.707	4 <sup>th</sup>
19	Irregularities or insufficient site information	3.375	1.177	19 <sup>th</sup>	2.830	0.792	28 <sup>th</sup>
20	Interference in the progress of work	3.325	0.848	20 <sup>th</sup>	3.500	1.025	21 <sup>st</sup>
21	Delay in issuing final certificate	3.250	0.859	21 <sup>st</sup>	4.550	0.589	2 <sup>nd</sup>
22	Failure to honor claims	3.225	1.000	22 <sup>nd</sup>	3.925	0.848	13 <sup>th</sup>
23	Discrepancies in the Bill of Quantities	3.225	0.935	23 <sup>rd</sup>	4.275	0.447	7 <sup>th</sup>
24	Failure to write instruction regarding variation	3.200	0.678	24 <sup>th</sup>	3.550	1.139	20 <sup>th</sup>
25	Determination of contract	3.175	1.046	25 <sup>th</sup>	3.700	0.994	18 <sup>th</sup>
26	Scope of work differ from contract	3.150	1.152	26 <sup>th</sup>	4.025	0.689	11 <sup>th</sup>
27	Third party nomination without consent	3.150	0.937	27 <sup>th</sup>	2.600	1.158	33 <sup>rd</sup>
28	Failure to reimburse for direct loss and expenses	3.125	1.100	28 <sup>th</sup>	4.050	0.740	10 <sup>th</sup>
29	Unfair or unrealizable program of work	2.975	0.851	29 <sup>th</sup>	2.500	1.072	35 <sup>th</sup>
30	Addition of unreasonable taxes and charges to contract sum	2.925	0.721	30 <sup>th</sup>	2.900	0.539	27 <sup>th</sup>
31	Changes in the design	2.825	1.095	31 <sup>st</sup>	3.725	0.922	17 <sup>th</sup>
32	Inaccessibility to necessary contract documents	2.800	1.187	32 <sup>nd</sup>	3.375	1.138	19 <sup>th</sup>
33	Delay in setting out of the works	2.725	0.836	33 <sup>rd</sup>	3.225	0.880	23 <sup>rd</sup>
34	Contract documents used other than the purpose of the contract	2.725	0.806	34 <sup>th</sup>	3.025	0.689	26 <sup>th</sup>
35	Delay in final payment	2.725	0.778	35 <sup>th</sup>	4.600	0.400	1 <sup>st</sup>

Source: Researcher's Analysis of DMA (2017)

**Comparison of Perception of Contractual Risks Factors between Consulting and Construction Firms on the Level of Awareness**

The result of the T – test for the comparison of perception of contractual risks factors between consulting and construction firms is presented in Table 2. The discussion of this result thereafter follows.

In the T - test presented in Table 2, it was observed that there exists a non-statistically significant difference between the perception of consulting and construction firms on the level of awareness of 35 contractual risk factors. The mean values observed for the perception of the consulting firms is 3.4771 while that of the construction firms is 3.5829. This also implies that the construction firms are better aware of the contractual risk factors than the consulting firms. The observed T calculated value of 0.747 was greater than the T tabulated value of 1.98, while the observed P value of 0.458 was greater than 0.05. The null hypothesis, which states that the perception of consulting and construction firms on the level of awareness of contractual risk factors does not differ significantly, was therefore accepted.

**Table 3: T-Test Result on the Comparison of Perception of Contractual Risks Factors between Consulting and Construction Firms**

Analysis No.	Variables Tested		Observations			Inferences		Action on Ho	
	X <sub>1</sub>	X <sub>2</sub>	Mean Values	T <sub>cal</sub>	T <sub>tab</sub>	P <sub>value</sub>	Remark		
1	Consulting Firm	Construction Firm	X <sub>1</sub> = 3.4771 X <sub>2</sub> = 3.5829	0.747	7	1.98	0.458	NSD	Accepte d

Source: Researcher's Analysis of Data (2017)

**DISCUSSION OF RESULT**

The result from this study on comparison of Contractual Risks Factors between Consulting and Construction Firms on level of awareness. Finding revealed that based on the consulting firm perceptions, Verbal instructions not backed by writing was ranked highest with the mean score of 4.475, followed by Assigning part of the work without consent and imposing of subcontractors with mean scores of 4.600 and 4.225 respectively. Delaying in issuing and responding to instruction, Delay in interim payment and Delay in issuing interim certificate were ranked next with mean scores of 4.200, 4.150 and 4.125 respectively. This shows that contractors perceived Verbal instructions not backed by writing and Assigning part of the work without consent as major factors influence contractual risk on level of awareness which may eventually result to dispute, poor quality of work, delay and disruption of work.

This result agrees with the findings of El-razak *et al.* (2014) and Wiguna *et al.* (2005). El-razak *et al.* (2014) opined that Accidents & theft, Extent of float in contract schedule, Receiving interim certificates, Retention, Delays in payments from client, Provision for fluctuation payments, Estimating error, Provision for interim certificate, Material delay, Agreeing interim valuations on site, Delay in agreeing variation, Delay in settling claims are the critical factors that influence contractual risk in Egypt.

Wiguna *et al.* (2005) stressed that Unforeseen site ground condition, Weather condition, Difficult in obtaining permits and ordinances, Changes in government actions, High inflation/ increased price, Delayed payments on contract, High interest rate, Defective design, Design change by owner, Inadequately compensated variation order, Defective construction work, Low labour and equipment productivity, Low labour and equipment productivity are the critical factors that influence contractual risks in united kingdom. Although the studies used Relative Important Index (RII).

Based on the T – test, it was observed that there is no statistically significant difference between the perception of consulting and construction firms on the level of awareness of 35 contractual risk factors. The mean values observed for the perception of the consulting firms is 3.4771 while that of the construction firms is 3.5829. This also implies that the construction firms are better aware of the contractual risk factors than the consulting firms. The observed T calculated value of 0.747 was greater than the T tabulated value of 1.98, while the observed P value of 0.458 was greater than 0.05. The null hypothesis, which states that the perception of consulting and construction firms on the level of awareness of contractual risk factors does not differ significantly, was therefore accepted.

This result is also in line with the findings of Emmanuel and Anjiba, (2015) which shows that there is no significant difference between the perception of contractors and consultants concerning the 62 risk factors in building projects, which admit a high level of agreement

between the perception of contractors and consultants. The mean values observed for the perception of the consultant is 60.72 while that of the contractors is 64.28. This also implies that the contractors has high level of agreement than the consultant. The result of the Mann Whitney U test shows that a p-value of  $0.581 > 0.05$  implies acceptance.

## CONCLUSIONS AND RECOMMENDATION

The study aimed to examine the influence of contractual risks on building contracts in Abuja, Nigeria. However, the study concluded that contractual risks has adverse consequences on the successful completion of projects. Finding revealed that based on the consulting firm perceptions, Verbal instructions not backed by writing was ranked highest with the mean score of 4.475, followed by Assigning part of the work without consent and Imposing of subcontractors with mean scores of 4.400 and 4.225 respectively. Delaying in issuing and responding to instruction, Delay in interim payment and Delay in issuing interim certificate were ranked next with mean scores of 4.200, 4.150 and 4.125 respectively. This shows that contractors perceived Verbal instructions not backed by writing and Assigning part of the work without consent as major factors influence contractual risk on level of awareness which may eventually result to dispute, poor quality of work, delay and disruption of work.

In order to compare the perceptions of construction firm in regard to level of awareness of contractual risk on building contracts. The results also revealed that Delay in final payment was ranked the highest factor influence contractual risks as per level of awareness with mean score of 4.600, followed by Delay in issuing final certificate with mean score of 4.550, Delay in issuing interim certificate and Discrepancies in drawings and specifications were ranked 3<sup>rd</sup> and 4<sup>th</sup> with mean score of 4.525 and 4.475 respectively. The factors ranked 7th and 8th were Discrepancies in the Bill of Quantities and Drawings and documents are not issued on time with mean score of 4.68 and 4.225 respectively. The results also informed that when the financial need of the project is not aligned with the project milestone, it can lead to stoppage which has both cost and time implications on the project.

Findings also revealed that there is no significant difference between the perception of consulting and construction firms on the level of awareness of the contractual risk factors. It was concluded that Contractor and consultant have adequate knowledge of risk and their sources in building contract. The study however recommended that risk management should be integrated into project management processes to improve building contract in Abuja.

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