Contractors' and Project Managers' Assessment of Risk Identification Exercises in the Nigerian Construction Industry.

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Abstract. Inadequacy of risk management has resulted in many projects failures like cost overrun, time overrun, quality depreciation and project abandonment; hence, this is a major challenge to all stakeholders in the industry. The study looked into risk identification exercise in the Nigerian construction industry in order to confirm various applications of risk identification and the extent of use in various projects. Foreign constructors, local constructors and project managers were given questionnaires to indicate the frequency of use of risk identification techniques. The result suggests in descending order brainstorming, checklist, Delphi technique, expert judgement and location visit as the most-used risk identification techniques. Furthermore, it was confirmed that the extent of use of all techniques is 24 percent by local contractors; foreign contractors are 51 percent while project managers is 58 %. The average per cent of all respondents risk identification exercises in project executed is 42% thus suggesting that the risk identification exercise is below average. In conclusion, construction industry practitioners should incorporate elaborate risk identification processes into the system in order to analyse, treat and control risks adequately, and complete the projects successfully. The establishment of legislation for the construction industry to acknowledge risk management processes in major investment projects is essential for the industry developmental goals. The local contractors should merge so that they can form a formidable group within the industry and compete with the foreign construction firms favourably.

Keywords: risk identification; risk management; project managers; local contractor; foreign contractor and construction industry

1 INTRODUCTION

RISK is defined as any emerging activity during project execution that restrains or opposes the achievement of established project cost, schedule or quality objectives according to [8]. Risk is the degree of uncertainty in any human endeavour, which is attributed to natural factors or unnatural factors. Risk is uncertainty that should be taken care of to reduce adverse situations that pervade the construction industry. The entire shortcoming in the industry can be attributed to lack of the knowledge bases about risk management among the stakeholders. Before the advent of project management, the traditional method of procurement in Nigeria only speculates a certain percentage (10%) for contingency in the Bill of quantities. Thus, taking care of uncertainties that may not occur or the contingency reserve that is not enough is a common thing in the industry. (Aibinu & Jagboro, 2002) [1], described contingency allowance as amount set aside in the pre-contract estimate purposely to make sure that the budget is accurate and sufficient to cater for both known and unknown risk. In addition [1], recommend a 17.34%, which fall between 15% to 20% contingency allowance recommended by United State Department for Energy for budget estimates of new buildings.

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Furthermore, risk identification exercises depend on facts and figures available before the commencement of the project.Therefore, contingency reserve calculations should be based on the following factors; projects; location of the project and type of client. Nevertheless, the issue of risk is now a common thing among professionals in the built environment, and since researches carried are not enough and demand of knowledge is endless. Hence, the researcher seeks to find out the extent to which risk identification exercise is crucial in the Nigerian construction industry. The knowledge base on risk management is going to increase to allay fears of the professionals on how to identify, analyse and manage risks in construction projects.

Risks in the construction industry are manifold as the aspects involved are very significant during the project planning through risk classification and risk identification. Risk identification and analysis exercises are very low during the project execution, which is more about risk control and monitoring except secondary risk surfaced. Risk in the construction industry is viewed to involve many activities, which has a negative effect the on four major constraints in projects namely time, cost, scope and quality. It is easy to identify and predict some risks in construction while some are completely elusive [9]. The identified and analysed risks are what [17] called risks taken care of by contingency reserve while the elusive ones are called uncertainty, which is taken care of by managerial reserve.(Ehsan, Alam, Mirza, & shaque, 2010) [9], claimed that critical effects of risks are 1. Failure to finish operational requirements, expected quality standard, time overrun and cost overrun. The focus is on assessment of riskidentificationexercise in the Nigerian construction industry. However, this is achieved through the following objectives: to confirm the available risk identification techniques in use: to ascertain the extent of use of the identified risk identification techniques.

1.2 Research Significance

Developing countries like Nigeria is in need of infrastructures to meet up with international standard that will encourage investors partake in the developmental processes. The development programmes are divergent, and it is imperative to process risk by analysing, and applying the strategy to reduce project abandonment, cost overrun, time overrun and quality disparagement. An example is the electricity projects in Nigeria that gulped about $20 billion (about 3.2 trillion Naira) within the last fifteen years according to [22], which was later sold to private investors for a token $2.5billion (about 404 billion Naira). Project management practice has a great potential of taking the country to the same level as China, India and other developing Asian countries. The risks of investing wrongly are reduced to the barest minimum as consultants can know the extent of professional input in risk management processes and increase the professional knowledge and awareness to serve the clients judiciously. The Government Agencies are accountable to the public by spending public money judiciously and formulate a policy to guide the issue of risk in all projects. The academia interactive sessions will have relevant information on the issues surrounding risk identification exercises in the construction industry.

Since contractor's approach to risk management is the concern of this research, it is pertinent to look at the key areas postulated by (Mead, 2007) 1. Contractors demand payment in accordance with the terms of the contract including any additional amount owing because of variation. 2. Contractor to achieve expected profit margin. 3. Contractors to complete the project in accordance with the programme. 4. Contractors to have had the contract fairly administered. 5. Contractors to have avoided liability to the third parties or the principal e.g. liquidated damages.

2 LITERATURE REVIEW

2.1 Risk Management

(PMI, 2013) [17] Guide defined project risk as "an uncertain occurrence or situation that, if it arises, has a positive effect on at least one project objective". (Wang, Dalaimi, & Aguria, 2004) [23], claimed that risk management approach consist of three main phases: risk identification, risk analysis, risk evaluation and risk response. (FSSEMP, 2005) [11], defined risk as a measure of the possible stipulated negative impact of an event ascertained by combining the likelihood of an event occurring with the impact should occur of incapability to accomplish all-encompassing project objectives inside 1. Defined cost, schedule and technical constraints or encumbrance and it comprise chance of not accomplishing attaining specific result. 2. The resultant effect of not accomplishing the result [14], claimed that insufficient information in the early stage of a project, often result in high level of risks related to cost, time and quality, hence the degree of the risk possibly decreases with project development. However, as the project is progressing and the risk are being realised the increased level of certainty reduces the level of risk in the project [14].

The magnitude of risk is reciprocal to the demand of project success attributes, which is directly related to the demand of project objectives. Hence, these attributes depend on the Project manager and the team direct intention to complete the project successfully to the satisfaction of all stakeholders. (Ali, Stewart, & Qureshi, 2007) [2], concluded that risk management require dare response in the construction industry as the inherent complexity is attributed to dynamic nature and entanglement with human factors. Insufficient risk management in developing countries has resulted in wastage of resources, under-quality results and eventual delays as accepted to be the whole parts of projects in the developed world [2] and 21]. (Banaitiene & Banaitis, 2012) [5] , agreed that the most intricate part of project management is risk management in that the project managers acknowledge and identify the root causes of risks and the consequences. (Banaitiene & Banaitis, 2012) [5], affirmed that risk management in construction project management is a broad and systematically way of identifying, analysing and responding to risks to achieve the project objectives.

(Baker, Ponniah, & Smith, 1999) [4], explained that risk as a systematic process comprises five identified stages namely identification, analysis, evaluation, response and monitoring. As such risk identification requires precise information and input the Project manager and the project team to guide in the development of other processes. (Ehsan, Alam, Mirza, & shaque, 2010) [9], claimed that the risk is all activities of the project, and the difference is that the degree of risk's presence varies. The construction industry has become more complex than before in coping with the unending demands of technological advancement that invigorate stakeholders. The complexity nature of the construction industry has compelled different input from various expert and professionals. (Gajewska & Ropel, 2011) [12], claimed that the risk is a very broad topic, and the definition indeed reflect the particular industry reference, which depends on the perspective of the researcher. However, the appropriate definition for this study is that therisk is quantifiable unforeseen situations in a project thatare solved before it happens. While uncertainty is a risk that cannot be quantified mathematically before it happens, which suggests that Project Manager's response mechanism must be adequate to cope with these uncertainties?

(Ehsan, Alam, Mirza, & shaque, 2010) [9], explained that another factor that has led to the risk's complexity is many external factors entrenched in the industry. The record overtime acknowledged that the construction industry is poor in terms of coping with risk that has contributed to the non-performance of many construction projects like time overrun, cost overrun, poor quality management and project abandonment. Consequences of the situation are that investors suffer; unemployment rate increases and the government do not enjoy benefits of investments like tax increase and National development.

2.2 Risk Management Procedure

(Mead, 2007) [16], and [20], claimed that risk management involves risk identification, evaluation, mitigation, and [4] added risk response and risk monitoring. According to [16], risk management is the cultivated procedures and arrangements channelled towards achieving possible opportunities whilst managing adverse effects. (Mead, 2007) [16], described risk management process as the schematic practice of management policies, procedure and applications to the exercises of communicating, establishing the circumstances, and analysing, and assessing, responding, monitoring and reviewing risk.

The project manager, the project team and project stakeholders determine risk management processes which are always in association to the intention of the project. In addition, the priority of the project within the performing organisation and the impact of the deliverables are involved. In conclusion, a simple low-impact project will not have the same risk planning as a high-priority and complex project. The identification of stakeholder's tolerance for risk is essential at the beginning of the project through written policy statement or by the stakeholder's actions during the project. According to [17] the time and money cost needed to mitigate the opportunity of failure is in proportion to the stakeholder's tolerance of risk on the project. The cost of confidence that there are no threats must be equilibrating with the assurance that the project succeeds without extraordinary costs.

2.3 Risk Identification

(Eldin, 2011) [10], confirmed that risk identification is the most important aspect of risk management as it exposes risks before the commencement of the project.(PMI, 2013) [17], defined risk identification as a process of identifying risks and documenting how risk presence can impact the project execution by the Project manager, the project team

and risk management team. Risk identification precedes risk categorisation in order to arrange the risks exposed according to risk's common characteristics, which include organising, ranking and isolation within the project. The four main categories are technical, quality, or performance risks, project management risks, organisational risks and external risks according to [17]. (March & Shaira, 1987) [15], explained that achievement of risk identification is through checklists; brainstorming (presence of stakeholders can affect brainstorming); site visit; corporate experience ("or drawing upon consultants or subcontractors experiences the particular industry segment) and analysis of prior projects. (Baker, Ponniah, & Smith, 1999) [4] (Bajaj, Oluwole, & and Lenard, 1997) [[3], explained that risk identification process is a top-down process where the risk is analysed holistically. (Baker, Ponniah, & Smith, 1999) [4], were of the opinion that personal and corporate experience, engineering estimate and brainstorming are the most effective way of identifying new risks and for qualitative use as risk identification. Others are the use of organizational charts to re-examine internal structure and flow charts to re-examine the procedure issues and through research. Interviews and surveys of stakeholders likely to be impacted by the project risk proposal. The purpose is to bring forth wide-embracing lists of sources of risks and incidents that may impact the accomplishment of the individual objectives identified aim in the context. The incidents may likely impede or enhance the accomplishment of those objectives.

(Mead, 2007) [16], established context, by acknowledgement it as the first responsibility of the management in which they manage those risks before risk identification. Hence, this is achieved by setting up of a range for the rest of the management process. It is after the completion of the context the risk identification starts. The context usually contains the organisations or companies external and internal environment, and the intention of risk management exercise is to determinethe interface between the internal and the external conditions. Clearly, the circumstances will change depending on which party (-principal, contractor, financier, insurer, end-user) is undertaking a risk management process [16]. (Mead, 2007) [16], analysed the situation thus: a contractor bidding for the project must do so in the circumstances of its corporate goals and targets; its specific sufferance for risk, and the environment in which the firm is operating. (Mead, 2007) [16], a myriad of risks could come up at any stage of the project lifecycle or phases, which will demand regular monitoring, management and treatment. However, at a certain juncture the process of risk identification needs to be concluded so that progress through the balance of deed acts measure in the risk management process.

3 METHODOLOGY

The study looked into relevant research works to have adequate information on the topic for better understanding and consequent literature reviews. Data obtained were through a survey administered to local contractors and foreign contractors whose experience in the construction industry spans ten years. The survey was sent to 115 randomly selected company's executives of both indigenous and foreign construction firms. A total of 42 executives of the local firms returned the completed questionnaire while only 25 executives of the foreign firms returned the questionnaires. The researcher waited for one year to collect the questionnaire and collate the responses for analysis. The third group is the consultant project managers, whose role has been mainly consultancy services on major projects. The project management manager's response to the risk management requirements is crucial in the development of the practice in developing countries like Nigeria. Out of the 103 questionnaires in the analysis to the contractors' response only 47 were returned to serve as the independent judgement of the project managers.

The questionnaires derived were from reviewed researches relevant to the intended aim and objectives of the study. The questionnaires were inferentially and relationally analysed to bring out the information supplied by the respondents to the general public and the learned environment. The questionnaire has section A, which is about the number of documented projects executed for the past ten years and the number of such projects in which the contractors and Project managers carry out risk identification exercises. The section B of the questionnaires consist the frequency of use of various risk identification techniques and different types of risk identificationtechniques used by each organization. The questions were arranged in Likert scale of one(1) to five (5), in which1,represents never, and 5 represent always.

In order, to determine the relationship between opinions of all respondentson risk identification techniques spearman rank correlation coefficient application becomes relevant and the weighted average applied determines the overall judgment.

$r_s=1-6\sum d^2/(n^2-n)$

1. t-test at 95% confidence level of the null (H_0) and alternative (H_1) was used to test the rank correlation coefficient.
2. $t=r_s \sqrt{n-2/1-r^2}$

The determinant was on whether the t calculated was greater or lesser than the critical value of t for (n-2) degree of freedom.

The hypotheses are

1. H_0: there is no significant difference between the opinion of local contractor and foreign contractors on the use of risk identification techniques in the Nigerian construction industry.
2. H_0: there is no significant difference between the opinion of foreign contractors and project managers on the use of risk identification techniques in the Nigerian construction industry.
3. H_0: there is no significant difference between the local contractors and project managers on the use of risk identification techniques in the Nigerian construction industry.

4 DISCUSSION OF FINDINGS

4.1 Findings On Risk Identification Exercises Carried Out In Projects Executed By Contractors And Project Managers For The Past Twenty Years.

Risk management exercises carried by local contractors and indicated in table 1 shows the contractors use risk identification before the commencement of the project in 24% of the projects executed. Thus meaning that out of average of seven projects executed in a year risk identification exercises were carried in average of two projects. In the case of foreign construction firms risk identification exercises were carried in 51% of the project carried for the past ten years. The result on the table for the foreign construction firms indicate that for every eight projects executed risk identification exercises were carried out in average of four projects. The result on the project managers' column indicate that for every 5.6 projects executed risk identification exercises were carried out in an average of 3.2 projects. On the overall, for an average of 6.6 projects executed risk identification exercise were carried out only on an average of 2.8 projects. In conclusion, the respondents have identified risks in 42.14 per cent of project executed for the past ten years.

TABLE 1.
RISK IDENTIFICATION EXERCISES CARRIED OUT BY CONTRACTORS AND PROJECT MANAGERS.

RESPONDENTS	LOCAL CONTRACTORS	FOREIGN CONTRACTORS	PROJECT MANAGERS	TOTAL
TOTAL PROJECTS				

EXECUTED	3066	2075	2350	7491
TOTAL NUMBERS OF PROJECT IN WHICH RISK IDENTIFICATION WERE CARRIED OUT	736	1058	1363	3157
PERCENTAGE OF PROJECT THAT RISK IDENTIFICATION EXERCISES WERE CARRIED OUT	24%	51%	58%	42.14 %

4.2 Risk Identification Processes

The result on the table below shows that local contractors prefer identifying risks with the following methods in descending order: pondering, consulting expert; brainstorming; checklist; visiting the site; historical data. The foreign contractors use brainstorming; Delphi techniques; checklist; expert judgment and experience more than any other processes. The result suggests priority over other types of identification procedures arranged in descending order: experience; database or historical data; workshop and consulting expert. The results suggest that local contractors ponder over risk, which reflect on the managerial content of the organization while they consult expert only when pondering has been exhausted without a logical conclusion. However, the industry still has no direct regulations (building code) on professional input, and this has cumulated into many misgivings in the industry. Furthermore, the foreign construction firms use in-house experts to response on the use of brainstorming, Delphi technique; checklist; expert judgment and experience before involving experts from relevant industry. Project managers' responses are not quite different to the other two groups as the Project managers' first choice is brainstorming followed by Delphi technique; expert judgment; checklist and risk breakdown structure. A weighted average of the three groups suggests brainstorming as the most commonly used followed by checklist, Delphi technique; expert judgment and visit site location.

TABLE 2.
RISK IDENTIFICATION TECHNIQUES

RISK IDENTIFICATION TECHNIQUE	Local contractors Mean	Rank	Foreign contractors Mean	Rank	Project managers Mean	Rank	Weighted average Mean	Rank
Brainstorming: The Project manager's skill is crucial in the technical session with the team in collaborating on the known and the unknown risks. The two sessions are idea generation and idea selection. (Shenkir & Walker, 2007),and(PMI;, 2009).	0.963	2	0.952	1	0.924	1	0.947	1
Delphi technique: This is a technique of getting an opinion in regard to future events from experts in the industry who use written responses in lieu of group meeting.(PMI, 2013)and(PMI;, 2009)	0.813	6	0.944	2	0.907	2	0.891	3
Influence diagram: This is a graphical exhibition of influence diagram formed by three types of nodule: utility, decision and possibility; and by two types of dependence: causal and informational. The determining factor relationship occurs between utility and chance nodes and stands for a probabilistic dependence. The informational relationship occurs between decision nodes and represents time precedence>(PMI;, 2009).	0.600	8	0.704	8	0.791	11	0.707	10
Interview/ expert judgement: This is an indefinite, facilitated meetings case-by-case or collectively administered with a set of experienced project team, specialists or project stakeholders. (Curtis & Carey, 2012) and(PMI;, 2009)	0.780	7	0.872	4	0.902	3	0.855	4
Checklist: consist of a list of itemized conditions indicated as "yes" or "no", used by an individual project team member, a group or an interview. (PMI;, 2009)	0.918	3	0.920	3	0.876	4	0.905	2
Nominal group technique: This technique comprised a silent generation of written ideas in simple sentences on postcards or paper bands; discussion about each recorded idea for purification and assessment of individual idea ranking with those that has been mathematically aggregated to yield a group decision (PMI;, 2009)	0.500	9	0.432	12	0.400	15	0.448	16
Flowchart: a graphical tool that shows the advancement of a process. The technique is applied for a better understanding of the risks or the ingredient of interrelation. (PMI;, 2009)	0.363	11	0.320	17	0.346	17	0.293	19
Pondering: This is a simple and basic approach involving the use of one single person with a previous field experience to identify risks and may serve as a default option if other approaches are not feasible or suitable (chapman and Ward 2003).	0.988	1	0.312	16	0.289	21	0.728	7
Root cause identification: This is a graphical process used in the investigation and categorization of the essential causes of project's risk divided in four phases; data collection' causal factor charting, root cause identification, recommendation generation and implementation(PMI;, 2009)	0.219	21	0.272	21	0.418	14	0.326	17
Questionnaire: Questionnaire consists of questions at the attribute level, with specific tips, examples and questions for subsequent investigations. The questionnaire application occurs in two phases: 1. Question and answer; 2. Issues clarification. (PMI;, 2009) and(Shenkir & Walker, 2007)	0.238	19	0.632	9	0.356	16	0.475	15
SWOT analysis: Swot is a strategic planning tool used to evaluate projects in each of the four perspectives strength, weakness, opportunities and threats, generally presented in a quadrant charter(PMI;, 2009) and(Shenkir & Walker, 2007)	0.206	23	0.288	19	0.320	19	0.283	20
Synectics: It is to solve problems in a creative way, so it consists in the union of apparently different and irrelevant objects and ideas. However, the challenge is to identify only the positive aspects in which the metaphor could be applied and develop options to solve the problem. In general, the rules of a synectics and brainstorming session are very similar; both of them include the presence of a facilitator to conduct the session. MOrano	0.213	22	0.288	20	0.253	23	0.255	24
Electronic brainstorming: The electronic brainstorming has the purpose of generating ideas over the web through networked computers, in which participants have a fast access to the ideas generated and are able to develop new ones AIKEN et al. 1994. The technique is an enhanced version of brainstorming,. MORANO	0.200	25	0.208	24	0.231	25	0.215	25
What if swift structure: The original SWIFT was developed as a simpler alternative to the HAZOP (hazard and operability)- the purpose of this technique is the identification of hazards and problems with set of words or short phrases concerning the operability of installations. SWIFT is a systematic study based on the group. HAZOP(IEC/ISO 31010, 2009)	0.263	16	0.224	23	0.297	20	0.265	21

Business impact analysis: This is also known as Business impact assessment. This technique analyses how the fundamental disruption risk can affect the operation of the organization, as well as identifying and quantifying the resources necessary to its management.	0.225	20	0.200	25	0.324	18	0.262	22
Case based approach: this technique is based on the cognitive Flexibility Theory, that is, human ability to restructure the knowledge to solve a problem when the situation changes. In this manner, it uses the case as the approach focus in which each case could be decomposed in smaller cases and the disassembled. Morano 2006.	0.275	14	0.248	22	0.249	24	0.258	23
Benchmarking: this is a collaborative operation amongst a group of individual units of a project, which concentrate on definite result. The technique collates measures and outcomes using general measurements, and identifies improvement opportunities. (Curtis & Carey, 2012)	0.283	13	0.328	15	0.849	7	0.623	13
Risk breakdown structure: this is a hierarchical data structure representing identified risks arranged by category to produce risk data for understanding, communication and management.	0.244	18	0.808	6	0.871	5	0.766	6
Visit location: locate the project site in order to assess available resources and general information about the site and its environment.	0.881	4	0.760	7	0.858	6	0.837	5
Databases, historical data: this is a process where existing internal and external data help the team to evaluate the probability and impact of a risk or favourable circumstances. Relying on existing data make possible objectivity and it is important that the existing data are relevant the current and projected conditions. (Curtis & Carey, 2012)	0.831	5	0.336	14	0.751	13	0.713	9
Template: this are set of flow charts of different situation of the development process. This template is introductory in nature and is designed as a common guidance to accomplish a top down evaluation of activities. (ClearRisk, 2014)	0.325	12	0.296	18	0.262	22	0.297	18
Study project documentation: study project documents like the Architects drawings and specifications, the bill of quantities, Services Engineers drawings and specification and any local planning authority documents(PMI;, 2009)	0.263	17	0.424	13	0.831	8	0.619	12
Study specialist literature: relevant documents on the type of project - like power generation projects- are studied by the Project manager and his team.	0.206	24	0.472	11	0.827	9	0.630	11
Stakeholder's analysis: Stakeholders input on the project are requested for further analysis by the Project manager and his team. In this process individuals or groups are identified and classified in relation to their impact on the action and the impact the action will have on them. (Wikipedia, 2014)	0.425	10	0.488	10	0.795	10	0.616	14
Past experience: this is collection of relevant information that one of the project stakeholders has obtained through experience and it must be applicable to the current situation**.** (ClearRisk, 2014)	0.269	15	0.832	5	0.773	12	0.727	8

4.3 Consideration of Local Contractors and Foreign Contractors on Risk Identification Factors

Rho=1-6$\sum d^2/n(n^2-1)$
=0.701 suggest that the correlation be positive and strong as it is above average. It shows that the local contractors and foreign construction firms' opinions on the use of risk identification factors in most of their construction projects are related.
H0: there is no significant difference between the opinion of local contractors and foreign contractors on the use of risk identification factors in the Nigerian construction industry.
Student's t distribution with degree of freedom n-2 were used
t= $rs\sqrt{n-2/1-r2}$
T-Calculated is 3.74, which is higher than t-tabulated 2.07. The observation suggests that the relationship between local contractors' opinion and that of foreign contractors is statistically significant. Therefore, we fail to accept H_0 the null hypothesis

4.4 Consideration of Foreign Contractors and Project Managers on Risk Identification Factors

Rho=1-6$\sum d^2/n(n^2-1)$
=0.855 suggest that the correlation be positive and very strong as it is above average. It shows that the foreign construction firms' opinions and that of project managers on the use of risk identification factors in most of their construction projects are related.
H_0: there is no significant difference between the opinion of foreign contractors and project managers on the use of risk identification factors in the Nigerian construction industry.
Student's t distribution with degree of freedom n-2 were used
t=$rs\sqrt{n-2/1-r2}$
T-Calculated is 5.61, which is higher than t-tabulated 2.07. The observation suggests that the relationship between foreign contractors' opinion and project managers is statistically significant Therefore, we fail to accept H_0 the null hypothesis

4.5 Consideration of Local Contractors and Project Managers on Risk Identification Factors

Rho=p=1-6$\sum d^2/n(n^2-1)$
=0.512 suggest a positive correlation that shows that the local construction firms' opinions and that of project managers on the use of risk identification factors in most of their construction projects are related.
H0: there is no significant difference between the opinion of local contractors and project managers on the use of risk identification factors in the Nigerian construction industry.
Student's t distribution with degree of freedom n-2 were used
t=$rs\sqrt{n-2/1-r2}$
T-Calculated is 3.33, which is higher than t-tabulated 2.07. The observation suggests that the relationship between local contractors' opinion and that of project managers is statistically significant Therefore, H_0 the null hypothesis is rejected.

TABLE 3.
RESULT ON HYPOTHESIS TESTED

parameters	r_s	t-cal	t-tab	p-value	Reject H_0
Local contractors and foreign contractors	0.701	3.74	2.07	0.05	Yes
Foreign contractors and project managers	0.855	5.61	2.07	0.05	Yes
Local contractors and project managers	0.512	3.33	2.07	0.05	Yes

5.0 CONCLUSION AND RECOMMENDATIONS

The Nigerian construction industry is below average in the risk identification exercises carried out by local contractors, foreign contractors and Project managers in executed projects. The fact is that awareness on the importance of risk identification exercises in construction projects is still very low in relation to industry expectation. However, there should be an update relevant to stakeholders concern that will propel the industry to meet international standard. The construction industry has been labeled to have the highest concentration of risks within a short time considering the volume of investment and many inputs from different stakeholders. The current development of project management is vital to the awareness and development of

project risk management as the professionals input is gaining momentum among the stakeholders. The project management practice is new, but the professionals need urgent update and input to rationalize the practice makeover through risk management. The risk identification techniques frequently used by the contractors and project managers are brainstorming, checklist, Delphi technique, expert judgment and site visit as shown on the weighted average on table 2. It is obvious that the contractors and Project managers know the risk identification techniques, but the frequency of use is not encouraging. The respondents' awareness is important even if the clients and other stakeholders are holding back as better communication between the stakeholders will forthrightly improve all partakers' knowledge. The local contractors are behind in risk identification exercises, and it indicates a lack of knowledge base and institutional differences in the industry. Therefore, for rapid growth of the local contractors synergizing is recommended to make up for each contractor's inadequacies and creates a value well above individual input. The industry is in need of legislation to guide the practice as this will benefit all stakeholders.

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