Examining the Quality Performance of Indigenous and Expatriate Contractors in Nigeria: Clients' Perspective

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Abstract: The Nigerian construction industry is faced with considerable amounts of pressure to improving quality performance. While there exist considerable number of studies that have examined factors influencing quality performance practices in various domains, these are not necessarily applicable to the construction companies in Nigeria. Hence, this empirical research assessed factors affecting the quality performance of indigenous and expatriate construction companies from the perception of clients. A cross-sectional research design was adopted. Following a systematic literature review in identifying the extant factors affecting quality performance, questionnaire survey was carried out to assess the level of agreement of the respondents. Purposive sampling techniques was used to obtain data from the target respondents. One hundred and nineteen copies of complete questionnaire were gotten and used for this study using descriptive and inferential analytical tools. The findings revealed sixty-four factors affecting quality performance in which analysis led to the conclusion that consistent payment of works done as at when due as well as the experience of the contractors at the works are necessary conditions that ensure good quality performance.

Keywords: Quality performance; construction companies; expatriate contractors; indigenous contractors; Nigeria

JEL Classification: L15

1. Introduction

In Nigeria, construction industry contributed approximately 3.01% to the GDP of the economy as at third quarter of 2019 (National Bureau of Statistics, NBS, 2019). The industry is still largely a source of employment to the country teaming workable population. Improvement in the organisational performance of this productive sector, construction industry, will lead to improved economy performance (Oke & Ogunsanwo, 2018). Unfortunately, the level of performance in the industry is nothing to write home about when compared to other industries (Idrus & Sodangi, 2010; Hassan *et al.*, 2018; Tripath et al., 2019). Aside cost, schedule and safety, another important indicator of the industry performance is quality (Wamberg et al., 2013), and this mainly related to construction organisation performance (Abdel-Salam & Gad, 2009). It is argued by Jraisat, et al. (2015) that construction contractors are on the losing side by not benefiting from the accrued advantages for not putting to use

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the knowledge of quality up to level that is generally accepted. The advantages are not limited to contractor's productivity improvement and increase in profit level, and ultimately increase level of satisfaction by client (Yasamis et al., 2002).

For a construction company to be at par with rivalry companies in this current unfavourable business environment, quality need to be giving adequate thought (Altayeb & Alhasanat, 2014). As recognised in history, quality is known for long to be the world's oldest profession (Collins, 1996), hence, professionals in this domain have quite diverse views as to the definition of the word 'quality' (Jha & Iyer, 2006; Hoonakker *et al*., 2010). Quality is expressed as the standards expected of a particular project especially from the point of view of specification prepared at the inception of such project. This quality, to some extent, believed to be the level of 'conformance with client's plan, specifications, acceptable codes and standards' (Leong, Zakuan, Saman, Ariff & Tan, 2014), or 'fitness of purpose' (Babatunde & Low, 2013). Obunwo (2016) defined quality as the positive worth of a product or service in relation to its conformance to requirements, suitability for use, and potential for ensuring satisfaction. Nzekwe-Excell (2010) averred that quality can be summarized as the customer's perception of that delivery (product or service) which surpasses expectations. Obunwo (2016) stressed that construction projects need to be handled in such a manner such that they will conform to requirements, fulfil the intended need and ensure satisfaction, both from clients and users. In view of the foregoing, quality is a critical prerequisite and determinant of competitiveness through which customer relationship is established and sustained.

In construction project delivery, contractors are saddled with the sole responsibility to producing the real work expected in the contract (Xiong et al., 2014) in conformity with client's specifications and standards. This makes their quality performance to be of significant interest to the success of the contract. Various past studies widely existed on quality performance of construction project, but there is that need to establish and compare the significant factors affecting quality performance of indigenous and expatriate contracting firms in developing economy like Nigeria. Based on this, it was pertinent to answer the question 'What were the factors affecting the quality performance of indigenous and expatriate contractors? Hence, the objective to this empirical research was to assess the factors affecting the quality performance of indigenous and expatriate construction companies from the perception of client. The resulting output form this empirical research seeks to create the required awareness of construction companies and their quality managers in relation to appropriate knowledge on quality performance of their organisations. Furthermore, this research will help the stated stakeholders, especially the indigenous contractors, to provide a better quality service so as to have a better chance of having competitive hedge over competitors in 'the marketplace' (Leong *et al.*, 2014). The remaining parts of the paper include; review of relevant concept from literature, research methodology, findings, conclusion and implications.

2. Review of Quality Performance

Generally speaking, performance is an important issue in the construction industry because the successful delivery of construction projects in qualitative terms hinges on performance. For long, the criteria used to evaluate this performance in the industry have been time, cost, health and safety, client's satisfaction, no dispute, and quality (Aje et al., 2009; Leong *et al.*, 2014; Larson et al., 2016; Tripathi & Jha, 2018), although, it depends on what context (Tripathi & Jha, 2018). In this study, quality performance, limited to organisational level, which means 'corporate strategies concerning

how to perform the construction operation are formulated' (Tripathi & Jha, 2018, p. 217). Time and cost performance were argued to be non-homogenous dimension with quality performance, which is believed to be on its own (Shenhar et al., 2001). These indicators are affected in varying degrees (Larsan *et al.* 2016) In the past, there exist many published research literatures focused on the cost and time performance of the construction (Karimi *et al.,* 2018). However, there exist limited research in construction management literature on the aspect of quality performance at corporate-level.

According to Leong *et al.* (2014), 'quality performance can be measured by looking into the non-conformance report in the ISO 9000 certified company'. 'It is results oriented, and seeks evidence of quality awareness within the operations and outputs of a contractor' (Yasamis *et al.*, 2002, p. 217). Yang (2006) measured quality performance using employee satisfaction, employee quality awareness, customer satisfaction and company's image as the independent variables.

2.1. Factors Affecting Construction Companies' Quality Performance

The success in terms of quality of any construction company in the industry can be depicted by its quality performance level. Hence, the need to identifying and assessing the significant factors influencing the expatriate and indigenous contractors' quality performance. From a construction project management perspective, numerous factors influencing the quality performance of construction organisation exist. Unfortunately, little or no research to date has objectively searched and empirically assessed continuous improvement on the factors influencing quality performance.

Various factors affecting quality performance have been identified and classified by researchers and professionals in the industry. Different approaches, methods and scopes were used in the identification and classification of the factors and this could lead to having a varying results in terms of frequency and importance in ranking. For instance, Callistus *et al.* (2014) assessed factors influencing quality performance in Ghana small scale construction companies and identified twenty-one (21) factors, which were grouped into two: consultant related and contractor related factors. Poor staff's training on quality and collection of kickback cum fraudulent acts were the significant factors in the two groups respectively. Wanberg *et al.* (2013) also identified and evaluated the following as factors influencing safety and quality performance. They are: 'adequate devotion of necessary resources to pre-planning; timely completion of tasks/activities correctly the first time; allowing the practice of workface leadership, and encouraging workers to take pride in their work'. Recently, Hussain, Fangwei et al. (2018) used structural equation model to assess the identified factors influencing quality of public projects in Pakistan. From the study of Hussain *et al.* (2018), a list of thirty-six (36) factors affecting quality was comprehensively generated from extant literature, and were categorised into stakeholders; construction; materials; design; external; and quality related factors.

From the organisations' perspective, Xiao and Proverbs (2002) examined the Japanese construction firms, using data collected from ninety-four (94) firms through a questionnaire survey, and comparison were made on quality performance with UK and USA construction firms. The study identified 'deep-rooted quality consciousness', 'close working relationships with subcontractors', and 'fully developed total quality management (TQM) systems and quality assurance (QA) certification' as the major factors affecting quality performance. Tripathi & Jha (2018) used questionnaire survey to collect and analyse responses from different organisation in Indian construction industry. The study identified 'good track record; good relationship with client, customer satisfactions; client satisfaction; and predictability of time in design and construction' as the top five (5) factors influencing

performance. Also, using exploratory approach in the Jordanian housing sector, Jraisat *et al.* (2015) both the contractors and the architects involved in the study are of the strong opinions that 'human resource management, customer satisfaction and construction specific factors' affect quality performance in the sector.

In Nigeria, construction projects managed by indigenous contractors are characterised by features such as project failure arising from poor management capability, project abandonment, cost and time overruns, poor mechanization, poor workmanship, financial difficulties, poor planning, and high frequency of litigation (Idrus & Sodangi, 2010; Oladimeji & Ojo, 2012). Babalola et al. (2015) carried out questionnaire survey on important factors that have influence on project performance in Akure State. The study evaluated 46 identified variables, in which 'contractor's progress payment, reduction in level of change order, considerable level of project progress monitoring, adherence to specifications and satisfactory quality, client's needs and expectation as required, and constant progressive stakeholders' coordination and relationship' are some of the top significant factors influencing performance.

From the foregoing literature review concerning the concept of quality, be it from quality experts in the quality management researches of construction industry or others, locally or foreign (Xiao and Proverbs, 2002; Yasamis *et al.*, 2002; Jha & Iyer, 2006; Idrus & Sodangi, 2010; Oladimeji & Ojo, 2012; Wanberg *et al.*, 2013; Callistus *et al.*, 2014; Babalola et al., 2015; Jraisat *et al.*, 2015; Tripathi & Jha, 2018), this current study arrived at a list of six-four (64) factors affecting the quality performance of both indigenous and expatriate contractors in the Nigerian construction industry.

3. Research Method

The study adopted a cross sectional research design. The research was carried out at a particular time to examine the influence of quality performance on client's patronage of indigenous and expatriate contractors in Nigeria. The study was conducted in Lagos state, Nigeria. Lagos State was selected as the study area. However, the study area was chosen because of its geographical location in the country. The population of the study were construction professionals within client organizations in the study area. The target respondents include but not limited to quantity surveyors, project managers, project architects and others involved in construction project delivery representing the interest of clients/client organizations.

The representation of the population must be obtained which sets the foundation of the study. Fellows and Liu (2003) define a sample as a good representative of the population. It is regarded as a specimen or part of population. There exist different sampling procedures where sample can be selected. For this study, purposive sampling method was adopted. The sampling technique was chosen because of the inability to obtain the comprehensive list of client organizations that procure construction projects within the study area. The study received total responses of 119 copies of the survey instruments from the target respondents.

A structured questionnaire was used as the research instrument for obtaining responses on the influence of quality performance in the client's patronage of indigenous and expatriate contractors in Nigeria from the targeted respondents. The survey instrument consists of two sections. Section 'A' required information on the personal profile of the respondents and the characteristics of the responding organization within the study area. Information in the second part of sections A is meant to

moderate the main parts (Section B) which collected data for the objective of the study. Section B examined the factors affecting the quality performance indigenous and expatriate contractors on a 5-point Likert scale. The research data was collected from the respondents from between September 2019 to August 2020.

The content validity of the research instrument was assessed by two senior academia of construction management from the Department of Quantity Surveying and Department of Building, Obafemi Awolowo University. The reliability of the research instrument was carried out with the Cronbach's co-efficient alpha; it measures the internal consistency of the collected data. The value of Cronbach's co-efficient alpha ranges from 0 to 1. However, Bolarinwa (2015) reckon that Cronbach's alpha coefficient value greater than 0.6 is adjudged good and acceptable. The values of Cronbach's Alpha for each field of the research instrument range from 0.73 to 0.85. The statistical tools for analysing the collected data used in the study include frequency and mean item score.

3.1. Results

The results obtained from the analysis form the basis upon which conclusions are drawn for the study.

Project managers constitute the highest proportion (46%) of the respondents indicating their high involvement in selection process of construction project delivery. About 55% of the respondents possess Bachelor's degree, while Master's degree holders have a 27.5% representation among the respondents. It was evident that 98% of the respondents received formal education, which put them in the right stead to provide valuable information for the study. A considerable amount (56.9%) of respondents have working experience of 11years and above which implies that they are sufficiently knowledgeable in construction matters to take active part in the selection process in the construction process. Quantity Surveyors constitute 40% of the respondents- the highest proportion, indicating their involvement in the selection process in construction project delivery. Civil engineers and architects have 24% and 18% representation respectively in the construction process. It was revealed that majority of the respondents have affiliation at different grade of membership with their respective professional bodies.

Factors Affecting Quality Performance Of Indigenous And Expatriate Contractors

The sole objective of the study is to assess the effect of selected factors on the quality performance of contractors. To achieve this objective, sixty-four factors (64) identified from previous literature as shown in Table 1. The identified factors may not be exhausted. This is due to nature and uniqueness of the construction industry (Iyer and Jha, 2005). The results presented in Table 1 and described as follows. For indigenous contractors, the high ranked factors (top 4) are: 'financial capacity of client', 'contractor's experience', 'quality specification/standards of the contractor' and 'commitment of all project participants' (with means scores 4.49, 4.46, 4.35, and 4.33 respectively) exert the highest influence on quality performance of contractors within the study area. On the other hand, 'financial capacity of client', 'contractor technical capacity', 'competence of contractors' technical staff', and 'contractor project supervision capacity' (also with means scores 4.50, 4.47, 4.33, and 4.31 respectively) of foreign construction firms sets the organization out in achieving good quality in their respective construction projects. Meanwhile, the overall response depicted the highly ranked factors in this study as shown in Table 1. 'Financial capacity of client' is ranked high (4.49), followed by

'contractor technical capacity', contractor project supervision capacity' and 'contractor's experience' (4.33 each) guarantee better quality performance by the construction organisations in the study area.

Table 1. Factors affecting Quality Performance of Indigenous and Expatiate Construction Contractors

	Indigenous				Expatriate				Overall	
	N	TS	Mean	Rank	N	TS	Mean	Rank	Mean	Rank
Financial capacity of the client	109	489	4.49	1	36	162	4.50	1	4.49	1
Contractor technical capacity	109	452	4.15	20	36	161	4.47	2	4.31	2
Contractor project supervision capacity	109	471	4.32	5	36	155	4.31	4	4.31	2
Contractor's experience	109	486	4.46	2	36	150	4.17	11	4.31	2
Quality specification/ standards of the contractor	109	474	4.35	3	36	153	4.25	5	4.30	5
Competence of contractors' technical staff	109	459	4.21	11	36	156	4.33	3	4.27	6
Good coordination among project participants	109	465	4.27	7	36	153	4.25	5	4.26	7
Commitment of all project participants	109	472	4.33	4	36	149	4.14	14	4.23	8
Complete and detailed documentation	109	463	4.25	9	36	151	4.19	10	4.22	9
Contractor's competence	109	468	4.29	6	36	148	4.11	17	4.20	10
Technical capacity of client's staff	109	462	4.24	10	36	147	4.08	22	4.16	11
Favorable working condition	109	439	4.03	29	36	153	4.25	5	4.14	12
Specification (i.e. accuracy/ compliance with Standards)	109	454	4.17	15	36	148	4.11	17	4.14	12
Good communication channels for the project	109	453	4.16	16	36	147	4.08	22	4.12	14
Monitoring and feedback by project participant	109	453	4.16	16	36	147	4.08	22	4.12	14
Quality management policy of the contractor	109	459	4.21	11	36	144	4.00	26	4.11	16
Quality Assurance & Quality Control	109	430	3.94	34	36	153	4.25	5	4.10	17
Level of resident supervision	109	447	4.10	23	30	123	4.10	21	4.10	17
Quality management	109	443	4.06	24	35	144	4.11	17	4.09	19

plan prepared										
Quality management plan of the project	109	465	4.27	7	36	141	3.92	33	4.09	19
Engineering capabilities	109	453	4.16	16	36	144	4	26	4.08	21
Collaboration among project participants	109	432	3.96	33	36	150	4.17	11	4.06	22
Capability to rent good equipment	109	430	3.94	34	36	150	4.17	11	4.06	22
Client's regular budget update	109	458	4.20	14	36	141	3.92	33	4.06	22
QA/QC process adopted by contractor	109	435	3.99	32	36	148	4.11	17	4.05	25
Evidence of financial capability issued by its banker	109	418	3.83	46	36	153	4.25	5	4.04	26
Contractor managerial capacity	109	429	3.94	34	36	149	4.14	14	4.04	26
Client's top management support	109	453	4.16	16	36	141	3.92	33	4.04	26
Negative attitude of project participants	109	440	4.04	27	36	144	4.00	26	4.02	29
Method Statement	109	422	3.87	44	36	149	4.14	14	4.01	30
Health Safety and Environment policies	109	449	4.12	22	36	138	3.83	34	3.98	31
Contractor's top management support	109	459	4.21	11	36	135	3.75	41	3.98	31
Level of mechanization	109	438	4.02	30	36	141	3.92	33	3.97	33
Conflict among project participants	109	426	3.91	40	36	144	4.00	26	3.95	34
Competitive tenders	109	423	3.88	42	36	144	4.00	26	3.94	35
Project manager competence	109	441	4.05	25	36	138	3.83	34	3.94	35
Contractor's financial capability	109	450	4.13	21	36	135	3.75	41	3.94	35
Use of prefabrication components	109	412	3.78	51	36	147	4.08	22	3.93	38
Contractor's regular budget update	109	438	4.02	30	36	135	3.75	41	3.88	39
Project conceptualization	109	426	3.91	40	36	138	3.83	34	3.87	40
Adequacy of Plant and Equipment	109	411	3.77	52	36	142	3.94	32	3.86	41
Plants and Equipment possessed by contractor	109	441	4.05	25	36	132	3.67	48	3.86	41
Contract duration of the project	109	430	3.94	34	36	135	3.75	41	3.85	43
Health Safety and	109	400	3.67	54	36	144	4.00	26	3.83	44

Environment policy of the contractor										
Consultants engaged for resident supervision	109	413	3.79	50	36	138	3.83	34	3.81	45
Availability of trained resources in the environment	109	421	3.86	45	36	135	3.75	41	3.81	45
Company profile	109	415	3.81	48	36	135	3.75	41	3.78	47
Consultants engaged in the project	109	429	3.94	34	36	129	3.58	50	3.76	48
Indecisiveness of project participants	109	414	3.80	49	36	132	3.67	48	3.73	49
Contractors' operatives	109	423	3.88	42	36	123	3.42	59	3.65	50
Tendering method used for the project	109	385	3.53	60	36	135	3.75	41	3.64	51
Completeness of project documents	109	411	3.77	52	36	126	3.50	55	3.64	51
Contract sum of the project	109	430	3.94	34	36	120	3.33	61	3.64	51
Level of use of off-site components	109	400	3.67	54	36	129	3.58	50	3.63	54
No of consultants engaged for resident supervision for this particular project	109	418	3.83	46	36	123	3.42	58	3.63	54
Procurement method used for the project	109	397	3.64	56	36	129	3.58	50	3.61	56
Current Audited Accounts Last three (3) fiscal year	109	397	3.64	56	36	129	3.58	50	3.61	56
Client's competence	109	440	4.04	27	36	114	3.17	62	3.60	58
Socio economic environment	109	389	3.57	58	36	129	3.58	50	3.58	59
Number of subcontractors engaged	109	379	3.48	62	36	126	3.50	55	3.49	60
Errors/mistakes in project documents	109	373	3.42	63	36	126	3.50	55	3.46	61
Evidence of current tax clearance certificate in the last three (3) fiscal years	109	382	3.50	61	36	123	3.42	59	3.46	61
Climate condition at site	109	373	3.42	63	36	114	3.17	62	3.29	63
Interaction among project participants - external (subcontractors and suppliers)	109	388	3.56	59	36	105	2.92	64	3.24	64

The tax clearance, climate condition, number of sub-contractors and error at project documentation are the factors that exert the least influence on the quality performance of indigenous contractors within the study area. The evidence of tax clearance has little or nothing to do with quality performance of

any contractors within the study area. It is expedient to note that climate condition on site rarely affect the quality of work undertaken by indigenous contractors in Lagos.

Evidence of current tax clearance, number of consultants engaged, client's competence and the interaction among external project participants are the factors that exerts the least influence on the quality performance of foreign contractors in Lagos state. The expertise of the contractors is very relevant and it is more important than client's competence and interaction among external project participants.

3.2. Discussion of Findings

This present study aimed at contributing to and extending the timing studies branching from performance. Concisely, it assessed the factors affecting quality performance of construction firms in Nigeria. The findings here indicated that considerable number of the factors identified in this this study are also important during the execution of construction project, the most ranked factor is the 'financial capacity of the client'. Client has that obligation to reimburse the contractor for job well executed (Bagaya & Song, 2016). Once the client has the capacity and ready to pay for the work, both indigenous and expatriate contractors are of the opinions that the expected quality of work will be delivered. A cordial working relationship between the client and contractor in terms of prompt and regular payment of work done influences quality performance of construction firms (Yasamis et al., 2002). This will in turn boost the contractor cash flows. Yasamis et al. (2002), also concluded that the combination of financial and technical capacities evaluation of contractor will produce better quality performance. Although, while the expatriate contractors ranked technical capacity higher, the indigenous contractors gave 'experience' higher preference. Poor coordination among project participants is also an important factor and this in agreement with the study of Callistus et al. (2014). Unlike in the study of Hussain et al. (2018), lack of proper construction technique, poor monitoring of quality and poor planning and policy on project quality were considered the topmost priority. 'Financial capacity of the client' comes 'contractor technical capacity', 'contractor project supervision capacity', and 'contractor's experience' ranked second in overall ranking (see Table 1). Although, there exist certain degree of divergent opinions from the indigenous contractor and the expatriate contractor, both group of respondents ranked these factors as important item. The believed that technical capacity of contracting firm is important and has effect on quality performance. This is in contrast to Callistus *et al.* (2014), which ranked 'training of contractors' staff on quality' as the most important factor.

As suggested by Idoro (2010), that for indigenous construction firms to be able to compete shoulder-to-shoulder with expatriate firms, these top five factors needed to be given adequate consideration by the client.

4. Conclusions

The study assessed the factors affecting the quality performance of contractors in the construction process and established that financial capacity of the client, contractor technical capacity, contractor project supervision capacity, contractor experience and quality specification/standards of the contractor are the significant factors affecting quality performance of indigenous and expatriate contractors. However, it can be inferred that consistent payment of works done as at when due as well

as the experience of the contractors at the works are necessary conditions that will ensure the good quality performance of contractors during the construction process.

The study evaluated the client's perception of the parameters for assessing quality performance of contractors in construction project delivery within the study area and it was established that quality of workmanship, materials and most notably construction methods will determine a great deal the likely quality performance of contractors during the construction process of any projects. The high quality of materials incorporated in the projects as well as the construction methodology will determine the effectiveness and efficiency of contractors at achieving a quality work in the projects. Using inferential statistics, the study revealed that there is no significant difference in the parameters as compared with indigenous and expatriate contractors in construction project delivery. This result is rather surprising as literature has showed that there is quite significant different in a number of parameters for assessing quality performance of contractors in project delivery.

These findings amongst other things will help all categories of contractors especially indigenous contractors to ascertain the significant factors affecting the quality performance of contractors in construction project delivery. This will make this type of contractors to make informed judgements on their quality performance during the construction process instead of making decisions based on experience, intuitions and subjective perceptions. The study also sets out to highlight client's perception of quality performance in construction project delivery. This will enable the contractors to take into considerations the key components of quality performance as listed by clients of these projects.

Another significant contribution of the study to knowledge is that it enhanced the extension of growing number of studies on influence of quality performance on client's patronage of foreign and indigenous contractors in the Nigerian construction industry which had received little attention from researchers after the study carried out by Idoro (2009) and where there has been comparatively little objective research. Finally, the study provides a platform on which future research on the study can be undertaken.

References

Abdel-Salam, H.M.E. & Gad, M. (2009). Cost of quality in Dubai: an analytical case study of residential construction projects. *International Journal of Project Management, 27*(5), pp. 501-511.

Aje, O.I.; Odusami, K.T. & Ogunsemi, D.R. (2009). The impact of contractors' management capability on cost and time performance of construction project in Nigeria. *Journal of Financial Management of Property and Construction,* 14(2), pp. 171-187.

Altayeb, M.M. & Alhasanat, M.B. (2014). Implementing total quality management (TQM) in the Palestinian construction industry. *International Journal of Quality & Reliability Management*, 31(8), pp. 878–887.

Babatunde, Y. & Low, S.P. (2013). *Cross-cultural management and quality performance: Chinese construction firms in Nigeria*. https://bit.ly/32ZNdVY.

Bagaya, O., & Song, J. (2016). Empirical Study of Factors Influencing Schedule Delays of Public Construction Projects in Burkina Faso. *Journal of Management in Engineering*, 32(5), 05016014. http://dx.doi.org/10.1061/(ASCE)ME.1943-5479.0000443.

Bolarinwa, O.A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health sciences researchers. *Nigeria Postgraduate Medical Journal*, 22, pp. 195-201.

Callistus, T.; Felix, A.L.; Ernest, K., Stephen, B. & Andrew, A.C. (2014). Factors affecting quality performance of construction firms in Ghana: Evidence from small-scale contractors. *Civil and Environmental Research,* 6(5), pp. 18-4.

Collins, F.C. (1996). *Quality: The ball in your court*. New Delhi, India: Tata McGraw-Hill.

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), pp. 953-969.

Hussain, S.; Fangwei, Z.; Siddiqi, A.F.; Ali, Z. & Shabbir, M.S. (2018). Structural equation model for evaluating factors affecting quality of social infrastructure projects. *Sustainability,* 10(5), p. 1415.

Idoro, G. (2009). The effect of globalization on safety in the construction Industry in Nigeria. *Proceeding of International Symposium on Globalization and Construction*, November, School of Civil Engineering, Asian Institute of Technology, Bagdok, Thailand.

Idoro, G. I. (2010). Influence of quality performance on clients' patronage of indigenous and expatriate construction contractors in Nigeria. *Journal of Civil Engineering and Management,* 16(1), pp. 65-73.

Idrus, A, & Sodangi, M. (2010). Framework for evaluating quality performance of contractors in Nigeria. *International Journal of Civil & Environmental Engineering* 10(1), pp. 34-39.

Iyer, K.C. & Jha, K.N. (2005). Factors affecting cost performance: evidence from Indian construction projects. *International Journal of Project Management,* 23, pp. 283-295.

Jha, K.N. & Iyer, K.C. (2006). Critical Factors Affecting Quality Performance in Construction Projects. *Total Quality Management & Business Excellence,* 17(9), pp. 1155–1170.

Karimi, H.; Taylor, T.R.B.; Dadi, G. B.; Goodrum, P. M. & Srinivasan, C. (2018). Impact of skilled labor availability on construction project cost performance. *Journal of Construction Engineering and Management,* 144(7), 04018057.

Leong, T. K.; Zakuan, N.; Saman, M. Z. M.; Ariff, M. S. M. & Tan, C. S. (2014). Using project performance to measure effectiveness of quality management system maintenance and practices in construction industry. *The Scientific World Journal*, 1-9, 591361.

National Bureau of Statistics (2019). Nigerian gross domestics product report (3rd Quarter). https://nigeria.opendataforafrica.org/NGNBSNGDPPTO2016/nigerian-gross-domestic-product-report-q4-2019.

Nzekwe-Excel, C.; Nwagboso, C.; Georgakis, P. & Proverbs, D. (2010). Integrated framework for satisfaction assessment in construction sector. *Journal of Engineering, Design and Technology, 8*(2), pp. 168-188.

Obunwo, C. (2016). A framework for enhancing project quality and customer satisfaction in government road construction projects in Rivers State, Nigeria. *PhD Thesis*. University of Wolverhampton, UK.

Oke, M. O. & Ogunsanwo, O.F. (2018). Contributions of the Productive Sectors' to the Nigeria Economic Performance. *Canadian Social Science,* 14(6), pp. 60-74.

Oladimeji, O. & Ojo, G. K. (2012). An Appraisal of Indigenous Limited Liability Construction Company in South-Western Nigeria. *Proceedings of the 4th WABER Conference, 24-26 July, 2012*, Abuja, Nigeria, pp. 1095-1109.

Shenhar, A. J.; Dvir, D.; Levy, O. & Maltz, A. C. (2001). Project success: a multidimensional strategic concept. *Long Range Planning,* 34, pp. 699-725.

Tripathi, K. K. & Jha, K. N. (2018). An empirical study on performance measurement factors for construction organisations. *Journal of Civil Engineering,* 22, pp. 1052-1066.

Tripathi, K. K.; Hasan, A. & Neeraj Jha, K. (2019). *Evaluating performance of construction organizations using fuzzy preference relation technique. International Journal of Construction Management*, pp. 1–14. http://dx.doi.org/10.1080/15623599.2019.1613210.

Tunji-Olayeni, P.; Mosaku, T.; Fagbenle, O. & Amusan, L. (2016). Project management competencies of indigenous contractors in Nigeria. *African Journal of Built Environment Research*, 1(1), pp. 49-58.

Wanberg, J.; Harper, C.; Hallowell, M. R. & Rajendran, S. (2013). Relationship between Construction Safety and Quality Performance. *Journal of Construction Engineering and Management,* 139(10), 04013003. http://dx.doi.org/10.1061/(asce)co.1943-7862.0000732.

Xiao, H. & Proverbs, D. (2002). The performance of contractors in Japan, the UK and the USA. *International Journal of Quality & Reliability Management, 19*(6), pp. 672-687.

Xiong, B.; Xia, M.; Masrom, M.; Ye, K. & Bridge, A. (2014). Examining the influence of participant performance factors on contractor satisfaction: A structural equation model. *International Journal of Project Management,* 32(3), pp. 482-491.

Yang, C. (2006). The impact of human resource management practices on the implementation of total quality management. *The TQM Magazine,* 18(2), pp. 162–173.

Yasamis, F.; Arditi, D. & Mohammadi, J. (2002). Assessing contractor quality performance. *Construction Management and Economics*, 20(3), pp. 211-223.