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Contributing Factors of Poor Construction Project Performance in Nigeria

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Abstract

The construction industry has been plagued with problems associated with lack of proper standards and lack of effective project management practice. The complex nature of the industry is what made the construction industry sensitive to poor projects performance. The issue of project performance failure has been left untreated for a very long time and this has caused the tendency for increasing effect on the construction industry and economy. Therefore, the objective of this paper is to identify the factors that contribute to poor construction project performance in Nigeria. The results of this study were achieved through a structured quantitative method of questionnaire distributed to 150 respondents comprising architects, quantity surveyors, civil engineers, and project managers in the Nigerian construction industry. Subsequently, 110 valid responses were retrieved, and the collected data were analysed using Statistical Package for Social Science (SPSS). The findings revealed that fluctuation of materials price, lack of conformance to specification, poor monitoring and feedback, poor contract management and supply of defective material were the most significant factors contributing to poor construction project performance in Nigeria. With these findings, this study has provided the overview to both consultants and contractors towards counteracting the effect of factors associated with poor project performance.

Keywords: Construction; Factors; Performance; Project

1.0 INTRODUCTION

Construction is regarded as one of the largest industries that play a prominent role in contributing to gross national product (GNP) in most countries which are estimated to be 10% (Navon, 2005). To a greater extent, the growth and development of a country are determined by the quality and capability of its products from the construction industry (Amade et al., 2015). Construction projects in Nigeria and worldwide are facing a lot of obstacles and imprecision as a result of the failure in meeting the project deadlines that had resulted to low quality, cost overruns and invariably leads to failure & abandonment of such projects (Amade et al., 2015). The persisting condition of failure and abandonment of projects by the public sector are continuously bringing serious challenges to the stakeholders in the construction industry (Ubani and Ononuju, 2013). Globally, many contractors have failed in meeting the performance requirements during the construction of projects. In addition, performance measurement systems are not effective to tackle this problem (Kadir et al., 2005).

According to Ayuba et al. (2012), the rate of poverty indices has stimulated Nigeria's government into developing infrastructural facilities as a means of driving support for rapid development in terms of inducing economic growth and development, but the performance of Nigeria's government in this aspect has not yielded any result. Nigeria's present and prevalent

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deterioration of various infrastructures such as roads, railways and transport are evidence of these facts (Amade et al., 2015). In recent time, meeting out the time, cost, and quality requirements of the work has been the prominent points in defining a project success (Nandhinipriya and Kowsalya, 2015). The complex nature, uncertain and dynamic state of most construction projects created obvious problems of not achieving their initially stated objectives (Ubani and Ononuju, 2013).

For instance, forty-three percent (43%) of constructed developments failed to meet full performance requirements in the year 2012 (Manifesto, 2013). This draws to the fore that the problem of poor project performance is a global issue that heightens the woeful nature of many countries in which Nigeria cannot be left out. This situation should not be left unaddressed because it would lead to more severe problems in the future forthcoming construction projects (Othman and Ahmed, 2013). Nonetheless, few researches had been carried out to identify the critical factors affecting the performance of the construction project in Nigeria. However, these factors are not sufficient enough to be used as a reference for poor construction project performance in Nigeria because all aspect of construction performance has not been dealt with (Helen et al., 2015). Therefore, this study was intended to identify both individual and groups of factors contributing to poor project performance extensively.

2.0 LITERATURE REVIEW

2.1 Poor Construction Project Performance

Appelbaum et al. (2015) defined performance as a successful achievement of an assigned undertakings measured against pre-set known of recognised excellent accuracy, accomplishment, cost and within the time. On the other hand, project performance is defined as a degree of achievement of certain endeavour or undertaking which relates to the prescribed goals or objectives that form project features (Ahmed et al., 2009). Navon (2005), suggested time, quality and productivity be the main key performance indicators affecting the performance of the construction project. According to Love et al. (2005), cost, time and quality are the main factors affecting the performance in the construction of projects.

2.2 Factors that Contribute to Poor Construction Project Performance

Table 1 depicts the factors that contribute to poor construction project performance that have been identified by earlier researches that include time factors, cost factors, employee factors, client factors, health and safety factor, environmental factors, quality factors, productivity factors, and contractor factors.

Table 1: Factors Identified as Responsible for Poor Project Performance

No	Factors Identified as Responsible for Poor Project Performance
Time Factors (TF)	
1	Inaccurate estimate of contract duration
2	Unavailability of resources
3	Supply of defective material
4	Concurrent site preparation activity with other works during construction
Cost Factors (CF)	
5	Fluctuation of price of materials
6	Shortage of materials
7	Poor contract management
8	Poor planning
9	Lack of recruiting competent and skillful employees
10	Attitude of employees
11	Lack of motivation
12	Lack of sense of belonging to work

No	Factors Identified as Responsible for Poor Project Performance
Quality Factors (QF)	
13	Aggressive competition during tendering
14	Inadequate involvement of owner during construction work
15	Poor monitoring and feedback
16	Lack of conformance to specification
Client Satisfaction Factors (CsF)	
17	Lack of information coordination between owner and project parties
18	Lack of leadership skills for project manager
19	Number of rework incidents
20	Number of disputes between owner and project parties
Environmental Factors (EnF)	
21	Climatic condition
22	Psychological job stress as a result of high frequency noise
23	Unfavourable site condition
24	Instability of government policy
Health and Safety Factors (HsF)	
25	Lack of application health and safety practice in organisation
26	Excessive occurrence of accidents in project
27	Lack of incentive
28	Lack of ease access to the site
Productivity Factors (PF)	
29	Site condition
30	Absenteeism of skill workers during normal working hour
31	Insufficient of material and equipment
32	Lack of safety
Contractor Factors (CoF)	
33	Poor planning and scheduling during construction of project by contractors
34	Manpower shortage
35	Lack of experience in contract

Furthermore, these factors have been grouped based on several related variables. For example, the time factors affecting projects performance are those factors contributing to time escalation such as inaccurate planned time of construction, unavailability of resources, supply defective materials during construction and concurrent site preparation with other work during construction. Inaccurate estimation of contract duration attracts the possibility of delay as the time planned for the overall construction is not sufficient enough to commence and complete as stipulated. According to Abbas (2006), allocation a short project time duration without decreasing the scope of the project might lead to project cost overrun. In addition, an extension of time has unwanted effects on both the client and contractor (this is either in form of turnover or extra outlay) and it sometimes heightens the controversial issue of time overrun responsibility, which may cause disagreement (Gunduz et al., 2012).

Likewise, several constructions of projects in different countries are bedevilling by poor cost performance. Most of the projects' constructions nowadays are associated with cost overrun (Azhar et al., 2008). For instance, the factors affecting cost performance in project construction are fluctuation price of materials, shortage of materials, poor contract management and poor planning. Fluctuation of materials price is a rigorous factor affecting the cost during construction. This could be as a result of the unstable condition of the exchange rate in the countries where the materials are retailed and procured. The materials price shoots up due to the escalation in the exchange rate. Hence this aspect leads to the project's cost to be escalated (Frimpong and Crowford, 2005). In addition, the shortage of material causes interruption to construction operations on site. According to Enshassi et al. (2009) shortage of construction material can also lead to construction time overrun during project execution. Lack of adequate materials in markets can cause late delivery of material to the site and consequently resulted to delay of construction (Hwang et al., 2013; Memon et al. 2010; Frimpong et al., 2005).

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Khan et al. (2014) argued that achieving employee performance is one of the most significant problem organisations is facing nowadays. This is because an organisation earns profit and competitive advantage through employees. The factors affecting employees' performances are; recruitment of employees and competence development, attitude of employees and leaders, lack of motivation and lack of sense of belonging to work. For example, the failure to consider the necessary factors of competence recruitment required such as performance evaluation in terms of their skills and ability to work and above all good attitude that can finally transform to good behaviours would consequently attract incompetent employees (Alitnaitwe et al., 2007). Meanwhile, assessment of employee's competency is an essential organisational practice to ensure that the workers exhibit sufficient requisite skills (Chan et al., 2004). This practice involves; recruit and select new workers, determine their performance and identify their skills and competent gap efficiently (Pheng and Chuan, 2006).

Every client aims to make sure that the project completed within the stipulated time, with high quality and within an agreed budget (Babatunde et al., 2010). There are several factors affecting client's satisfaction performance in the construction of projects such as lack of information coordination among owner and project parties, lack of leadership skills for project manager, number of disputes between the owner and project parties and number of rework incidents. Improper coordination among client and construction parties in the construction industry is one of the factors that lead to misunderstanding and project poor performance (Alinaitwe, 2008). Poor project performance may not necessarily be due to the incompetence of anyone else but the improper coordination between client and project parties during the construction of the project (Enshassi et al., 2011). Moreover, the client's influence is one of the key contributing factors resulting in a lack of commitment and contractor's inefficiency in the project. They further remarked that these problems need to be immediately and carefully resolved, particularly through proper coordination, cooperation and communication among the client and the construction parties (Low and Chuan, 2006).

Constructions of projects are often associated with fatalities and injuries. The safety performance of construction can only be achieved when the construction is free from accidents. There are different factors affecting safety performance in construction such as excessive occurrence of accidents in a project, lack of application of health and safety in organisation, lack of ease access to the project or site location and lack of inceptive. For example, the high rate of accident during project construction affects the safety and health performance of the project (Thomas and Martin, 2004). Major fatalities and injuries will cause absence from the work with to affect efficiencies, quality and time of completion which are the major objectives of the project. Hence affect the safety performance of construction project.

3.0 METHODOLOGY

A quantitative approach had been employed as a method of data collection, which involved the distribution of a well-structured questionnaire to the respective respondents. In order to get reasonable population sampling, the list of the companies was obtained from the Corporate Affairs Commission (CAC), the government agency that saddles with the responsibilities of registering both contractors and consultants. A simple random sampling technique has been employed and the questionnaires were administered to 150 respondents in the construction industry such as architect, civil engineer, quantity surveyor and project manager in Gombe State, Nigeria. The questionnaire survey was administered and retrieved using e-mail, survey monkey, and hand distributions. This questionnaire employed the five - points Likert scale to enable respondents to select based on the average index method by given priority while selecting the variables in ascending order. All the collected data from respondents were then analysed using Statistical Package for Social Sciences (SPSS) version 23.0. Finally, the findings were shown in the form of descriptive and mean score presentations.

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4.0 RESULTS AND DISCUSSION

4.1 Rate of Response

There were one hundred and fifty (150) questionnaires that were administered to the respondents. Subsequently, one hundred and thirteen (113) were retrieved, but only one hundred and ten (110) were valid. Therefore, the analysis was based on the 110 valid questionnaires which equate to a response rate of 73%. The 73% of a response rate was good, as a response rate of more than 40% is acceptable (Akoa, 2011).

4.2 Respondents' Demographic

Table 2 shows the respondents' demographics including the type of organisation, working experience, and completed projects.

Table 2: Respondents' demographic

	Frequency	Percentage (%)
Type of organisation		
Consultant	51	46%
Contractor	59	54%
	110	100
Respondent's Working Experience		
1-5 years	23	21%
6-10 years	31	28%
11-15 years	43	39%
More than 16 years	13	12%
	110	100
Completed Projects for the Last Five Years		
1-5 projects	14	13
6-10 projects	22	20
11-15 projects	25	23
More than 16 projects	49	44
	110	100

Table 2 depicts that 25 of the respondents (23%) were architects and civil engineers, while 22 (20%) of them were quantity surveyors. On the other hand, 25 of the respondents (23%) are civil engineers, and finally, 38 of the respondents (34%) were project managers. In addition, majority of the respondents (39%) that participated in this survey have working experience between 11-15 years. Similarly, 49 of the respondents (44%) were involved in more than 16 projects throughout their carrier.

4.3 Factors that Contribute to Poor Construction Project Performance

Table 3 presents the result of the analysis in respect of factors that contribute to poor construction project Performance in Nigeria.

Table 3: Individual Factors that Contribute to Poor Construction Project Performance

No	Factors	Mean	Overall Ranking	Group Ranking
1	Fluctuation of materials price **(CF)**	4.08	1	1
2	Lack of conformance to specification **(QF)**	3.97	2	1
3	Poor monitoring and feedback **(QF)**	3.82	3	2
4	Poor contract management **(CF)**	3.77	4	2

5	Supply of defective materials **(TF)**	3.72	5	1
6	Lack of recruiting competent and skilful employees during recruitment **(EF)**	3.69	6	1
7	Lack of application of health and safety practice in organization **(HsF)**	3.68	7	1
8	Aggressive competition during tendering **(QF)**	3.66	8	3
9	Poor planning and scheduling during construction of project by contractors **(CoF)**	3.65	9	1
10	Shortage of materials **(CF)**	3.64	10	3
11	Concurrent site preparation activity with other works during construction **(TF)**	3.63	11	2
12	Climatic condition **(EnF)**	3.61	12	1
13	Lack of leadership skills for project manager **(CsF)**	3.58	13	1
14	Absenteeism of skills workers during normal working hour **(PF)**	3.55	14	1
15	Instability of government policy **(EnF)**	3.53	15	2
16	Lack of information coordination between owner and project parties **(CsF)**	3.52	16	2
17	Inadequate involvement of owner during construction work **(QF)**	3.51	17	4
18	Lack of safety **(PF)**	3.48	18	2
19	Lack of Incentive **(HsF)**	3.47	19	2
20	Lack of sense of belonging to work **(EF)**	3.45	20	2
21	Number of disputes between owner and project parties **(CsF)**	3.42	21	3
22	Unavailability of resources **(TF)**	3.38	22	3
23	Inaccurate estimate of contract duration **(TF)**	3.37	23	4
24	Unfavourable site condition **(EF)**	3.36	24	3
25	Excessive occurrence of accidents in project **(HsF)**	3.33	24	3
26	Number of rework incidents **(CsF)**	3.32	26	4
27	Lack of motivation **(EF)**	3.27	27	3
28	Poor Planning **(CF)**	3.20	28	4
29	Insufficient of materials and equipment **(PF)**	3.18	29	3
30	Site condition **(PF)**	3.17	30	4
31	Lack of ease access to the site **(HsF)**	3.04	31	4
32	Manpower shortage **(CoF)**	2.98	32	2
33	Psychological job stress as a result of high frequency noise **(EnF)**	2.89	33	4
34	Attitude of employees **(EF)**	2.68	34	4
35	Lack of contractor's experience in contract **(CoF)**	2.50	35	4

As illustrated in Table 3, the findings of this research were arranged from the highest to the lowest mean value; out of thirty five (35) variables, seventeen (17) variables fall within the range of $3.50 \leq$ Average Index < 4.50, which were regarded as the most significant factors contributed to poor construction projects performance in Nigeria.

From the results, fluctuation of price of materials was found to be the most significant factors that contribute to poor construction project performance in Nigeria. The result indicates that fluctuation of price of material has been a great factor leading to poor performance of construction project in the Nigerian construction industry. This is due to the unstable and inflation nature of price of material affects the initial cost of construction as the project will subject to re-measurement to determine the variation in price as a result of increase in price (Omoregie and Radford, 2006; Memon et al., 2014).

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Likewise, lack of conformance to specification is one of the factors that contribute to construction project performance in Nigeria. This is because failure to comply with the provided specifications will affect the quality performance of the construction project (Enshassi et al., 2009; Mamman and Omozokpia, 2014). The third ranked factor among the most significant factors contributing to poor construction project performance is poor monitoring and feedback. Poor monitoring and timely feedback during project execution can result in the project to poor workmanship and less quality (Callistus et al., 2014; Iyer and Jha, 2005).

Poor contract management has been agreed by respondents as one of the factors leading to cost overrun in the Nigerian construction industry. This is because, in Nigeria, the politicians have influence over public contract; nepotism is a topical issue today as most contracts are awarded to their colleagues, friends or relatives regardless of whether they are capable of meeting project's objectives or not, which cause the project to exceed its budget and stipulated time (Omoregie and Radford, 2006).

Similarly, the supply of defective material is one of the factors leading to the poor performance of the construction project in Nigeria by respondents. This is as a result of using faulty building material, in which the time needed to make good of defected work or replacement of material can affect the time and schedule in respect of sequence items of construction, and consequently leads to cost overrun (Vyas, 2013).

4.4 Group of Factors that Contribute to Poor Construction Project Performance

The factors were then grouped into a group based on their relevancy. Table 4 presented a group of factors that contribute to poor construction project performance in Nigeria.

Table 4: Group of Factors that Contribute to Poor Construction Project Performance

No	Group of Poor Performance Factors	Mean	Ranking
Time Factors			
1	Inaccurate estimate of contract duration	3.37	
2	Unavailability of resources	3.38	
3	Supply of defective material	3.72	
4	Concurrent site preparation activity with other works during construction	3.63	
	Average mean score	**3.53**	3
Cost Factors			
5	Fluctuation of price of materials	4.08	
6	Shortage of materials	3.64	
7	Poor contract management	3.77	
8	Poor planning	3.20	
	Average mean score	**3.67**	2
Employee Factors			
9	Lack of recruiting competent and skillful employees	3.69	
10	Attitude of employees	2.68	
11	Lack of motivation	3.27	
12	Lack of sense of belonging to work	3.45	
	Average mean score	**3.27**	7
Quality Factors			
13	Aggressive competition during tendering	3.66	
14	Inadequate involvement of owner during construction work	3.51	
15	Poor monitoring and feedback	3.82	
16	Lack of conformance to specification	3.97	
	Average mean score	**3.74**	1
Client Satisfaction Factors			

17	Lack of information coordination between owner and project parties	3.52	
18	Lack of leadership skills for project manager	3.58	
19	Number of rework incidents	3.32	
20	Number of disputes between owner and project parties	3.42	
	Average mean score	**3.64**	4
Environmental Factors			
21	Climatic condition	3.61	
22	Psychological job stress as a result of high frequency noise	2.89	
23	Unfavorable site condition	3.36	
24	Instability of government policy	3.53	
	Average mean score	**3.35**	6
Health and Safety Factors			
25	Lack of application health and safety practice in organization	3.68	
26	Excessive occurrence of accidents in project	3.33	
27	Lack of incentive	3.47	
28	Lack of ease access to the site	3.04	
	Average mean score	**3.38**	5
Productivity Factors			
29	Site condition	3.17	
30	Absenteeism of skill workers during normal working hour	3.55	
31	Insufficient of material and equipment	3.18	
32	Lack of safety	3.48	
	Average mean score	**3.35**	6

As illustrated in Table 4, each group has its variables that contribute to poor constructions' project performance. From the results, quality factor is the most significant factors contributing to poor construction project performance in Nigeria. It was shown in the result having a mean value of 3.74. The respondents ranked this group of factors as 1st among the group of factors contributing to poor construction project performance in Nigeria. This is as results the most significant factors leading to poor quality of construction project in the Nigerian construction industry such as; of lack of conformance to specification, poor monitoring and feedback and aggressive competition during tendering.

The 2nd ranked group factor is cost factor, it was shown in the results of the findings to have the mean value of 3.67. The respondents agreed upon cost factors as one of the groups of factors contributing to poor construction project performance. This is due to the significance of cost factors that contribute to poor construction project in Nigeria such as; fluctuation of materials, poor contract management and shortage of material in the study area.

Finally, time factor is the next significant group of factors that contribute to poor construction project performance in Nigeria. It was ranked 3rd with a mean value of 3.53 as shown in the results of the findings. This finding illustrates the most significant time factors that contribute to poor construction project performance in the study area to include; supply of defective materials, concurrent site operation with other activities during construction and unavailability of resources.

5.0 CONCLUSION

The objective of this research is to identify the factors that contribute to poor construction project performance in Nigeria. The findings revealed that top five (5) most significant factors that contribute to poor construction project in Nigeria are fluctuation of price of materials, lack of conformance to specification, poor monitoring and feedback, poor contract management and supply of defective materials. On the other hand, quality factor, cost factor and time factor are revealed as the most significant groups of factors that contribute to poor construction project performance in Nigeria. The foregoing factors were confirmed as the most significant factors leading to poor construction project performance in Nigeria.

Therefore, deploying necessary performance criteria such as cost time and quality can contribute a solid platform for reviving the Nigerian economy, and for building a more balanced and independent economy especially during stable political and economic conditions. There is a need for the construction industry to put much emphasis on the performance of construction project by focusing on the key factors bedevilling cost, time, quality, client satisfaction, productivity and health and safety performance. Hence, strategies to ensure the successful delivery of construction projects in the Nigerian construction industry are required.

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