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Evaluation of Site Management Practices for Building Projects Delivery Adopted by Indigenous Contractors in Lagos and Ondo States, Nigeria

Arijeloye Bamidele Temitope*, Oriyomi Joshua Oluwadunsin

Department of Quantity Surveying, Federal University of Technology, Akure, Nigeria

Email address:

btarijeloye@futa.edu.ng (Arijeloye Bamidele Temitope)

*Corresponding author

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Abstract: The research focuses on the construction site management practices and the challenges that impede such practices in Ondo and Lagos states of Nigeria respectively with the view of minimizing waste and improve sustainability concept on public project delivery. The research survey targeted Architects, Quantity Surveyors, Builders and Civil Engineers affiliated with indigenous contracting firms through the administration of well-structured questionnaires. A simple random sampling technique was adopted in choosing the research respondents. The collected data were analyzed using both descriptive and inferential statistics. Out of 301 questionnaires distributed, only 135 questionnaires were returned and analyzed with 44.85% response rate. In-depth interview were also conducted on some selected site workers (labors) to elicit their views on the level of awareness and adoption of site management practices in their various sites. The results shows that minutes writing, resource leveling, cash flow management, proper payroll and daily work report are the five (5) topmost site management practices adopted on construction sites in the study area. The study also shows that respondents are highly aware about the site management practices. The result further shows that Lack of standardization in equipment management, plant hiring/purchasing problems, lack of on-site assistance, wrong curing procedures, ineffective communication practices, are the five major challenges that impede site management practices in the study area. Analysis of the transcribed interview shows that the site workers (labour) aware about the site management practices but are rarely followed judiciously. The research seeks the opinion view of construction professionals in the study area which may not be generalize to all other construction sites in south-western geopolitical zone of Nigeria; construction site workers needs to be kept abreast of the site management practices by organizing regular training for all cadre of site workers. The implication for practice is that investing in training will improve productivity, loyalty, minimizing of waste to the environment and increase contractors profitability. The study seeks to support the concept of buttressing the awareness on practicing adequate site management strategies on construction sites rather than relying on theoretical concept on the subject matter. It supports the proposition that adequate awareness of these practices will improve construction project performance.

Keywords: Site Management Practices, Sustainability, Public Project Delivery, Construction Site Operatives, Waste Minimization

1. Introduction

The construction industry is very crucial to the development of any country [1, 2]. The interdependency of the sector to the economic growth of any nation can be measured by development in physical infrastructures, such as buildings, roads and bridges [3-6]. Isa, Jimoh, and Achuenu [7] opined that the sector contribute significantly to the country's Gross Domestic Product (GDP) and he industry is full of inherent potentials, such as self-sufficiency in cement production that will stabilize the materials sector and the huge deficit in physical infrastructure which is key to creating opportunities for sustainable development.

Pilger, Machado [8] stated that construction projects are

one of the largest and most complex undertakings that involve several site operatives and operation and this highlights the need to adequately manage the construction site through effective use of construction materials, labor and services in order to minimize waste and enhance profitability, this is buttressed by Mohamed and Anumba [9] that described construction site management as proper organization of site materials, labor and other resources on the site. Construction site management is important to achieving productivity on construction sites as well as mitigating rework, defects, delays, disputes and cost overruns on construction projects. Effective site management is important in achieving project performance in term of time, cost, quality, waste and safety targets [10]. Construction site management practices relates to the direction and supervision of operations on construction projects in order to make sure that material, resources, time, safety, quality and cost along with other project indicators are well manage for reaching the goals and scope in construction project while maintaining the sustainability.

A study on site management practices have attracted the attention of researches globally but have not been given adequate consideration in Nigeria. The need to assess site management practices is to come up with effective means of managing an array of construction activities so as not to jeopardize the sustainability concept on the immediate environment. Therefore, study seeks to investigate functional best practices that could be integrated into the Nigerian construction industry in order to have an effective project delivery and the objectives of the study are to:

1) Determine the level of awareness of site management practices adopted by construction professionals in Ondo and Lagos state and
2) Evaluate the challenges that impede site management practices in the study area.

2. Site Management Practices

Construction site management involves all activities that turn basic resources into a finished product [11]). Foster [12] noted the importance of site management practices as it entails crucial strategic approaches in improving the performance expected from a construction project. The organization of materials, labor, and other resources on construction sites and its activities affects the flows of information and finance, thus construction sites are therefore, seen as a key area where money is made or lost and where there is considerable scope for improving efficiency, productivity and quality. The following had been found in literature by various authors as types of site management practices and explained in details.

2.1. Good Minutes Writing

Writing good meeting minutes can save time and money, succinctly to say that good minutes capture the purpose of site meetings and its agreed outcomes are a record that can be referred back to and be used for follow up purposes for future site operations. Mohamed and Anumba [9] opined that good minutes are concise and to the point, which do not leave out critical information.

2.2. Adequate Labor Allocation

Dabirian, Abbaspour, [13] opined that success of construction projects depends heavily on correct management of human resources and allocation of labor to the project. Proper allocation of labor serves as an effective managerial tool that can be adopted on construction sites; it is also an improvement factor for construction project delivery in terms of cost and time.

2.3. Proper Payroll

Payroll is an essential practice on construction site. Musarat, Alaloul, [14] opined that Project success is also associated with the project productivity which relates to the labors wages and salaries. Wages and salaries play important role in retaining labors in the industry. Payroll refers to the employees you pay, along with employee information. It's also the amount you pay employees during each pay period. Payroll can as well be referred to as the process of actually calculating and distributing wages and taxes.

2.4. Adequate Progress Reporting

According to Lamptey and Fayek [15] a progress report is a type of business writing designed to update someone on various tasks of construction operations. It's usually written for managers, project stakeholders or construction-wide updates. A progress report is a formal, documented, and structured way of keeping people in the know which enables the project management team to know the status of their project and to make informed decision.

2.5. Notice and Claims

A construction notice is a legal statement used by the infrastructure industry to file a lien for a property, success in adopting and managing change orders tool has resulted in uninterrupted construction operations based on agreed final project cost as well as duration [16]. A well-written construction notice should be readable in appropriate format, and the legal leverage to execute construction plans.

2.6. Good Drawing Register

Drawing register is a key document in the proper organization of a construction project and as such needs to be adequately organized rather than a loose sheet of paper with a scribbled list of drawing numbers and titles [9]. A good drawing register serves multiple purposes, being at various times a declaration of intent, a record of performance and possibly a legal document in the event of dispute on abandonment of project.

2.7. Technical Information

Jimoh [11] opined that technical information includes

scientific information, that relates to research development, engineering, test, evaluation production, operation, use, and maintenance of munitions and other military supplies and equipment.

2.8. Adequate Estimating

Construction estimating is the process of anticipating the expense of building a physical structure. This step is essential, and one of the most crucial in the construction process [17]. Estimators need to be as accurate as possible because profit margins are impacted if any estimated direct and indirect costs for the project are off by a slight amount. Every successful project starts with a precise and accurate cost estimate this can also be applied during post contract period.

2.9. Proper Valuation

According to Jimoh [11] valuation in construction is the method of calculating the present marketable cost of a building. Valuation of a building depends on the sort of building, its structure, durability, location, size, shape, types and quality of building materials used and the cost of the materials.

2.10. Cost Value Reconciliation

Cost value reconciliation is a tool specific to the construction industry, and it measures cost against budgets on construction. It gives an ongoing account of contracts profitability by measuring cost against value at different points in a contract's lifecycle, right through to completion [18].

3. Factors Affecting Site Management Practices in Nigeria

3.1. Lack of Technical Talent

At present, the demand for technical talents for the construction industry has been relatively high, mainly due to the fact that the management-oriented talents for the technology industry are indeed insufficient and the brain drain is frequent. Many technicians on construction sites tend to be young and have very little experience in technology management [19]. Therefore, for proper management of construction sites, management needs to solve the personnel problems. Management personnel need to deal with a great deal of engineering project management content, such as on-site installation technology, the preparation of various programs, and technical information, etc.

3.2. Lack of Standardization in Equipment Management

There are many type and quantities of equipment for construction projects, which in turn determines that one of the focuses on project site construction management is equipment management. First of all, there are many problems with the lack of standardization in equipment management related to the project department. Managers only need to compare the parameters of the equipment to find out the management status of the project. However, often many managers only focus on the duration, neglect the management of the equipment, and lack detailed data records. In addition, a number of idled things are placed in some sealed devices, resulting in many devices that lack personnel management and are unused [13]. In addition, there are some problems of the equipment management work in the construction site environment. For the equipment at the on-site construction stage, many projects have not attracted attention and it is difficult to fundamentally enhance the effectiveness of site management. The management of equipment has not established a standardized system and has not been effective against cost control.

3.3. Lack of Systematic Management of Materials

In the management of construction materials, there is a shortage of staff and it is not stable enough. Sometimes there is more than one person. This messy state of management has led to a lack of systematic management of materials at the site. In the actual construction project, some management and gatekeepers have not handled the material in terms of identification and maintenance. In addition, some materials may have varied degrees of damage when they are received and distributed. Or when some trucks enter the construction site, there will be related issues such as untimely loading and unloading [13]. Different types of damage factors will increase the cost of materials in transportation and increase the operating costs of the entire project. In the process of taking over the materials, some people ignored the relevant regulations and did not effectively control the exact number of materials, which led to an increase in the cost of material inventory and it was difficult to truly show its role in the construction process.

3.4. Management and Administration Problems

Most site organizations have policies which lay down procedures for the site manager to observe regarding management and administration problems. These problems have to be addressed in order to ensure that project objectives are achieved. Additionally, there is a wide range of constraints which could occur on-site and for each the site managers should be prepared to deal with them in a systematic and efficient way [9]. This can only normally be possible if the project managers or site managers have been forewarned, trained or educated on how to deal with the unexpected [12]. The most common problems were: Inaccurate/Inadequate Planning: Wrong assumptions were made as to where the project was in terms of completion, low technological input, unfavorable clients' attitudes towards projects and lack support from top management. Training and Education Issues: The majority of personnel on site are skilled in one very narrow area and the teams had not become truly multi-functional. Motivation Issues: The bonuses paid were still based on old efficiency-based performance measures rather than team performance. Shortage of Skilled Workers: Affected, by the cyclical nature

of the construction industry [9].

3.5. Technical Problems

Technical problems include plant problems, piling and existing services. Plant Problems involves lack of adequate maintenance of construction plant and management [18]. Many construction organizations tried to avoid plant problems by providing the minimum of maintenance, which has often resulted in unexpected breakdowns, lost production and inefficient machinery [10]. Piling Construction problem involves lack of proper methods used in recording piling information which duplicates efforts and potentially places the integrity of the piling works at risk. Data transfer errors made from the schedule and miscalculation during pile construction can result in nonconforming piles being constructed, leading to additional costs, delays, and client dissatisfaction [15] while problems with existing Services involves utility services such as existing sewers, water distribution pipes, electricity cables, gas mains and telecommunications cables which disrupt construction works.

4. Methodology

4.1. Background Information of Respondents

The background information of respondents for this study is hereby presented such as respondents' profession, educational qualification, year of experience and number of construction projects participated. The table showed that 41.5% of the respondents were quantity surveyors by profession, 28.1% were architects, 17.8% were civil engineers and 12.6% were professional builder respectively. However, 12.6% of these professionals were registered NIOB members, 41.5% were NIQS members, 28.1% were NIA members and 17.8% were NSE professional members. In the same vein, 40.7% of the respondents were HND graduates, 9.6% has PGD certificate, and 25.2% of the respondents has B. Sc. / B. Tech, degree. 7.4% had M. Sc. / M. Tech and 17.0% were PhD degrees. The table also reveals the year of working experience of the respondents with 43.7% of the respondents having 0 to 5 years working experiences, 36.3% has 6-10 years, 20.0% has between 11 to 15 years' experience. It is to be noted that majority of the respondents had a high level of education and represents different registered professional bodies in Nigeria. This implied that the high level of education will have a significant impact on their appreciation of the issues being discussed in this study.

4.2. Level of Awareness of Site Management Practices Adopted on Construction Sites

Table 1 illustrates the level of awareness and adoption of site management practices and principles on construction sites in the study area. Site management practices that are in the range of 4.21 to 5.0 mean item score (MIS) were regarded of having a very high level of awareness /adoption; only minutes writing were within this range with mean score of 4.41 level of awareness and MIS of 4.32 level of adoption. Similarly, practices that are in the range of 3.41 to 4.20 were regarded as having high level of awareness/adoption; resource leveling, cash flow management, proper payroll, daily work report, proper valuation, purchase requisition, testing, safety policy, setting out, final account preparation, building regulation insurance, adequate labor allocations and sub contract arrangement falls into this category with MIS of 3.41 to 3.59. Site management practices that are in the range of 2.61 to 3.40 mean item score (MIS) were regarded of having moderate level of awareness. Network analysis, good drawing register, dimensional checks, plant returns, adequate estimating, notice/claims, plant maintenance, technical information, exception reports, cost value reconciliation, adequate variations and method statements were in in this category with MIS of 3.08 to 3.40. The table revealed that the rate of awareness of site management practices in the study area was high.

Table 1. *Awareness of Site Management Practices and its Adoption.*

Site Management Practices	Awareness level			Adoption level		
	Mean	Std Dev	Rank	Mean	Std Dev	Rank
Minutes writing	4.41	1.074	1	4.32	1.091	1
Resource levelling	3.59	1.083	2	3.55	1.077	7
Proper payroll	3.58	1.056	3	3.62	1.062	2
Purchase requisition	3.58	1.148	4	3.53	1.096	8
Cash flow management	3.57	1.057	5	3.49	1.141	11
Daily work report	3.54	1.039	6	3.41	1.093	15
Proper valuation	3.54	1.039	7	3.40	1.155	17
Adequate labor allocations	3.53	1.167	8	3.57	0.868	4
Safety policy	3.50	1.259	9	3.31	1.178	25
Setting out	3.49	1.283	10	3.50	1.087	10
Testing	3.47	1.077	11	3.56	1.157	6
Sub contract arrangement	3.43	1.094	12	3.30	1.235	26
Building regulation insurance	3.43	1.157	13	3.45	1.175	14
Good drawing register	3.41	1.074	14	3.31	1.089	24
Network analysis	3.40	1.101	15	3.41	1.147	16
Dimensional checks	3.39	1.072	16	3.37	1.212	20
Final account preparation	3.38	1.179	17	3.30	1.275	27
Progress reporting	3.36	1.059	18	3.57	1.139	5
Plant returns	3.34	1.148	19	3.33	1.035	23

Site Management Practices	Awareness level			Adoption level		
	Mean	Std Dev	Rank	Mean	Std Dev	Rank
Notice/claims	3.34	1.289	20	3.47	1.123	12
Adequate estimating	3.32	1.230	21	3.34	1.191	22
Plant maintenance	3.29	1.122	22	3.39	1.127	18
Exception reports	3.28	1.147	23	3.36	1.150	21
Adequate variations	3.25	1.218	24	3.58	1.112	3
Technical information	3.25	1.306	25	3.45	1.077	13
Cost value reconciliation	3.17	1.231	26	3.52	1.132	9
Method statements	3.08	1.220	27	3.38	1.170	19

Table 2 displays Spearman correlation coefficients, significance values, and the number of cases with non-missing values (N) between level of awareness of site management practices and its adoption in the study area. The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative). The absolute value of the correlation coefficient indicates the strength, with larger absolute values indicating stronger relationships. The significance of each correlation coefficient is also displayed in the correlation table. The significance level (or p-value) is the probability of obtaining results as extreme as the one observed. If the significance level is between (0.00 to 0.19) then the level of correlation is very weak positive. If the significance level ranges from 0.20 to 0.39, it shows the level of correlation is weak positive, significance level between (0.40-0.59) is perceived to be moderate positive, significance level between (0.60-0.79) is perceived to be strong positive and significance level of (0.80-1.00) is rated to be Very strong. The results of the correlation analysis indicate that there is a very weak positive significant level of correlation relationship between the awareness and adoption of site management practices in the study area which suggest that the respondents are highly aware of the site management practices but rarely adopted.

Table 2. *Correlation between the awareness and adoption of Site Management Practices.*

			Level of Awareness	Level of adoption
Spearman's rho	Level of awareness of Site Mgt Practices	Correlation Coefficient	1	0.345
		Sig. (2-tailed)		0.078
		N	27	27
	Level of adoption of Site Mgt Practices	Correlation Coefficient	0.345	1
		Sig. (2-tailed)	0.078	
		N	27	27

4.3. Factors Impeding Site Management Practices

Table 3 also illustrated the challenges impeding site management practices in the study area. Factors with MIS of 4.21 to 5.00 were regarded of having a very high level of impediment on the site management practices; Lack of technical talent and Ineffective communication practices falls within this range with mean score of 4.59 and 4.57 respectively. Similarly, factors with MIS of 3.41 to 4.20 were considered of having high level of impediment; Lack of in-site assistance, lack of standardization in equipment management, shortage of skilled workers, inadequate enforcement, inaccurate measurement by the quantity surveyor, lack of motivation of the labor force, use of inexperienced or unqualified supervisor, unstable or shortage of staff, poor working conditions, lack of training and education, inadequate storage facilities, security risk, plant problems, existing services, inaccurate or inadequate planning, lack of details on sections of drawing, poor or inaccurate information, management and administration problems, random raw materials stacked, and technical problems were found to fall into this category. Also, factors with MIS of 2.60 to 3.40 were considered of having moderate level of impediment; non-compliance with specification, defective or damaged formwork, piling construction, lack of systematic management of materials, inability to read and understand the drawing, stacking construction waste, wrong selection of material and wrong curing procedures were found to fall into this category.

Table 3. *Impeding Factors of Adequate Site Management Practices.*

Factors	Mean	Std. Dev	Rank
Lack of technical talent	4.59	0.922	1
Ineffective communication practices	4.57	1.008	2
Lack of on-site assistance	3.71	0.977	3
Lack of standardization in equipment management	3.68	0.931	4
Shortage of skilled workers	3.65	1.048	5
Inadequate enforcement	3.63	1.06	6
Inaccurate measurement by the quantity surveyors	3.62	1.052	7
Lack of motivation of the labor force	3.61	1.18	8
Used of inexperienced/unqualified supervisor	3.58	1.007	9
Unstable / shortage of staffs	3.56	1.217	10
Poor working conditions	3.52	1.123	11

Factors	Mean	Std. Dev	Rank
Lack of training and education	3.52	1.235	12
Inadequate storage facilities	3.51	1.049	13
Security risk	3.49	1.087	14
Plant problems	3.49	1.243	15
Existing services	3.46	1.053	16
Inaccurate or inadequate planning	3.44	1.14	17
Lack of details on sections of drawing	3.44	1.225	18
Poor or inaccurate information	3.43	1.249	19
Management and administration problems	3.42	1.056	20
Random raw materials stacked	3.41	1.288	21
Random raw materials stacked	3.41	1.288	21
Technical problems	3.41	1.364	22
Non-compliance with specifications	3.4	1.223	23
Defective or damaged formwork	3.39	1.222	24
Piling construction	3.38	1.162	25
Lack of systematic management of materials	3.36	1.159	26
Inability to read and understand / interpret the drawing	3.34	1.191	27
Stacking construction waste	3.32	1.213	28
Wrong selection of material	3.29	1.258	29
Wrong curing procedures	3.23	1.162	30

Table 4 shows the analysis of the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO). The analysis revealed that the data retrieved were suitable to be tested for factor analysis and the Bartlett's Test of sphericity for correlation adequacy between the variables was highly significant. The Bartlett's Test of sphericity indicates whether a data or the sampling considered can be used for factor analysis. The Table shows Kaiser-Mayer-Olkin (KMO) equals 0.711 which signifies that 71.1% of the data gathered were satisfactory for factor analysis. Bartlett's test is highly significant (p-value = 0.000), suggesting that the correlation is an identity matrix which means that the correlation matrix of all the item listed have a significant correlation at the 5% level and therefore exploratory factor analysis is appropriate.

Table 4. *KMO Test on Challenges that Impede Site Management Practices.*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.711
Bartlett's Test of Sphericity	Approx. Chi-Square	901.914
	Df	435
	Sig.	.000

Table 5 shows Total Variance Explained on the factors impeding site management practices in the study area. Principal Component Analysis (PCA) revealed the presence of six components with eigen values exceeding 1, explaining 21.42%, 6.67%, 6.36%, 5.70%, 4.86% and 4.45%, of the variance respectively.

Table 5. *Total Variance Explained on Challenges that Impede Site Management Practices.*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.425	21.417	21.417	6.425	21.417	21.417
2	2.002	6.673	28.090	2.002	6.673	28.090
3	1.907	6.357	34.447	1.907	6.357	34.447
4	1.711	5.703	40.150	1.711	5.703	40.150
5	1.457	4.857	45.007	1.457	4.857	45.007
6	1.334	4.448	49.455	1.334	4.448	49.455
7	1.285	4.284	53.739			
8	1.208	4.026	57.765			
9	1.131	3.772	61.536			
10	1.051	3.503	65.040			
11	0.985	3.284	68.324			
12	0.953	3.177	71.501			
13	0.869	2.898	74.398			
14	0.823	2.744	77.142			
15	0.775	2.584	79.726			
16	0.692	2.306	82.032			
17	0.635	2.115	84.147			
18	0.562	1.875	86.021			
19	0.515	1.716	87.737			
20	0.483	1.609	89.347			

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
21	0.454	1.512	90.859			
22	0.434	1.447	92.306			
23	0.406	1.353	93.659			
24	0.376	1.254	94.913			
25	0.346	1.155	96.067			
26	0.303	1.009	97.077			
27	0.275	0.917	97.993			
28	0.246	0.820	98.813			
29	0.199	0.663	99.476			
30	0.157	0.524	100.000			

Extraction Method: Principal Component Analysis.

A model with six challenges/factors may be adequate to represent factors that impede site management practices. The factor grouping based on the varimax rotation is as shown in Table 6 and each variable weigh heavily on only one of the Applications. The impeding factors were named before the interpretation of the six extracted applications; the naming is therefore subjective and depends on the background and training of the analyst. Therefore, the thoughtful naming of these factors was deemed to be appropriate for this study and these factors are labeled and interpreted as follows: i Knowledge factors/challenge ii. Management factor/challenge iii. Stakeholders factor/challenge iv. Competences factor/challenge v. Stacking factor/challenge and vi. Communication challenge.

Table 6. *Reduced Components for Challenges that Impede Site Management Practices.*

S/N	Factor Components	Variables	Factor Loading
1	Knowledge Challenge	Poor or inaccurate information	0.605
		Unstable / shortage of staffs	0.604
		Shortage of skilled workers	0.570
		Poor working conditions	0.556
		Lack of motivation of the labor force	0.529
		Wrong selection of material	0.499
		Defective or damaged formwork	0.426
2	Management Challenge	Lack of on-site assistance	0.745
		Wrong curing procedures	0.639
		Technical problems	0.555
		Lack of standardization in equipment management	0.549
		Security risk	0.517
		Inability to read and understand / interpret the drawing	0.415
3	Stakeholders Challenge	Inaccurate measurement by the quantity surveyors	0.653
		Inadequate enforcement	0.614
		Plant problems	0.512
		Management and administration problems	0.478
		Lack of details on sections of drawing	0.466
		Inaccurate or inadequate planning	0.457
		Inadequate storage facilities	0.433
4	Competences Challenge	Non-compliance with specifications	0.686
		Used of inexperienced/unqualified supervisor	0.568
		Existing services	0.563
		Lack of technical talent	0.459
5	Stacking Challenge	Random raw materials stacked	0.632
		Stacking construction waste	0.601
		Piling construction	0.531
		Lack of training and education	0.434
6	Communication Challenge	Lack of systematic management of materials	0.687
		Ineffective communication practices	0.627

5. Discussion of Findings

The objective of this research was to assess the level of awareness and usage of site management practices adopted by construction professionals in Ondo and Lagos states of Nigeria respectively. The result reveals that the respondents were more aware of minutes writing as a site management practice tool, as it was ranked top in the analysis in Table 2. The findings of this research further revealed that; Resource Leveling, proper payroll, purchase requisition, cash flow management, daily work report and proper valuation are also top site management practices known to the professionals in the study area. Also, the result reveals minutes writing, proper payroll, adequate labor allocations, and adequate variations methods are major practices adopted for site

management. This is agreement with the findings of [9] and [12]. Anumba, [9] opined that allocation of human resources is an effective managerial tool that can strongly influence project performance in terms of cost and time. Therefore, effective site management can be improved by adequate estimation of labour needs. The challenges that impede site management practices from the outcome of the research includes lack of standardization in equipment management, plant problems, lack of on-site assistance, wrong curing procedures, ineffective communication practices, wrong selection of material, lack of motivation of the labour force, defective or damaged formwork as indicated by the construction professionals in the study area. At present, the demand for technical talents for the construction industry has been relatively high, mainly due to the fact that the management-oriented talents for the technology industry are indeed insufficient and the brain drain is frequent occasion as a result of lack of incentives in the sector. Many technicians on construction sites tend to be young and have very little experience in technology management [18]. Most site organizations have policies which lay down procedures for the site manager to observe regarding management and administration problems. These problems have to be addressed in order to ensure that project objectives are achieved. Additionally, there is a wide range of constraints which could occur on-site and for each the site managers should be prepared to deal with them in a systematic and efficient way [9]. This can only normally be possible if the project managers or site managers have been properly trained or educated on how to deal with the unexpected occurrences on site [12]. Based on the findings and the conclusion of this research, the following options are recommended: (a) there should be more research and development programs concerning construction site management practices in the country, (b) in other for this practice to be more known globally it is important to collaborate with foreign companies who are familiar with these practices.

6. Conclusion

The essence of the current study is to evaluate site management practices adopted on construction sites in Lagos and Ondo states of Nigeria. Administration of survey questionnaires and selected respondents was adopted to canvass their opinions on site management practices and factors impeding these practices in the study area. The instrument relied on a catalogue of site management practices as found in relevant literature. The interview conducted shows that the site workers were only aware about the site management practices but are rarely followed these practices judiciously. These workers need to be kept abreast of the site management practices by organizing regular training for all cadres of site workers. The implication for practice is that investing in training will improve productivity. Findings of this research provide possible directions for further studies such as productivity studies on construction sites. This study was limited to Ondo and Lagos States of Nigeria, other researchers can look into other states or location in the federation.

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