WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Assessment of Construction Productivity in Lagos

Ifeoluwa Akande[a,]*, Oke Teminijesu[b], Edikan M. Okon[c], Abideen D. Abass[d]

[a,b,c,d]*Bells University of Technology, Ota, Ogun State, Nigeria*

A B S T R A C T

The study focused on the assessment of construction productivity in Lagos. The construction industry in Nigeria is labour intensive and it is the highest employer of the nation's workforce. The industry accounts for over 50% of the country's gross capital formulation. The thought that improvement in construction productivity would make substantially beneficial to the national economy is the motivation for this research. To provide answers to the research questions, a total of ninety (90) questionnaires were randomly distributed among registered professionals operating in the built sector of the study area. The study concludes that factors affecting construction productivity include: inadequacy of site personnel; non-payment of overtime and compensation; inadequate knowledge of project; poor material quality; quality of professionals; and workmanship. The research concluded that there is a need to invest more in the education and training, re-training of employees towards a better production output. There is also the need to adhere to suitable quality management practices, this will stimulate productivity in the construction sectors.

Keywords:Construction; Labour; Productivity; Workmanship; & Quality.

1.0 Introduction

1.1. Background to Study

It has been hypothetically and empirically acknowledged that the Construction industry is a very strong and viable contributor to the economy of any nation (Zhai, Reed, & Mills, 2014). Governmental ministries, departments, and agencies (MDAS), organizations (private and non-governmental organisations) and industries, invest huge sums of money in the development of vital and sustainable construction infrastructures because of its significant impact on the economic growth of a country and huge financial return on private individuals' investment (Niyonkuru, 2016). Even though development in the construction industry, has a direct impact on the nation's gross domestic products, it also helps in stimulating growth in other industries such as the manufacturing industry for an improved economy.

In developing countries, the construction of physical facilities makes up more than one-half of gross domestic investment (Frolova, Zankovsky, Dudin, Zinkovsky, & Kirsanov, 2018). Therefore, it becomes pertinent to ensure that these huge investments are not wasted by providing adequate measures for ensuring effective planning, monitoring, and adequate control in the design, construction, and maintenance of these construction projects. This can be achieved by keeping the productivity and construction standards across all project execution stages. The Nigeria construction industry has not been performing well as it ought to perform for several reasons (Kasimu & Isah, 2012). Construction workers in Nigeria's public service have almost zero productivity (Odesola & Idoro, 2014). In a nutshell, the poor productivity of craftsmen has been identified as one of the most daunting problems that construction industries face, especially those in developing countries.

Consequently, there is a growing and continuous interest in productivity studies all over the world because of the importance of labour productivity in the management and control of project costs. Identifying and evaluating the factors that influence productivity are critical issues facing construction managers (Tsehayae & Robinson, 2014). Another problem associated with construction labour productivity is the possibility of its variation across geographical locations. Specifically, this study tries to find to determine factors that influence construction productivity intending to ascertain whether those factors could influence construction productivity.

* *Corresponding author*. Tel.: +234(0)7066420095
E-mail address: i_akande@bellsuniversity.edu.ng

1.2. Statement of the Research Problem

Most empirical studies have revealed that the input of the construction industry in Nigeria is quite low when compared with many developing countries (Adedokun, Ibironke, & Olanipekun, 2013). Several studies had been channeled to the challenge of productivity in the Nigerian Construction industry. Lawal and Kolawole (2004) investigated the productivity of the Nigerian public service construction artisans while Olatunji et al (2000) studied the effects of training on the performance of construction craftsmen in south-western Nigeria (Fagbenle, Phillip, & Omuh, 2012). These studies revealed that Nigeria is having a myriad of construction productivity challenges, which is typical of most developing countries. They argued further that little or no success resulted from every attempt to proffer solutions to these challenges.

This study, therefore, assesses the issue of productivity in construction in Lagos, Nigeria.

1.3. Research Questions

This study seeks to answer the following questions:

i. What are the training opportunities available to building labour in Lagos?
ii. What is the relevance of such training to the Nigerian construction industry in the study area?
iii. What are the rewards placed on each construction labour in the study area, and?
iv. What are the possible means of improving productivity in the construction section in Lagos?

1.4. Aim and Objectives

1.4.1 Aim

This study is aimed at identifying productivity improvement factors according to their relative importance in construction projects in Lagos, to eliminate or minimize productivity problems, and improve productivity.

1.4.2 Objectives

The following objectives will be developed to achieve the stated objective:

i. To identify the training opportunities available to building construction labour in Lagos,
ii. To assess the relevance of such training to the Nigerian construction industry in the study area;
iii. To determine the rewards placed on each construction labour in the study area, and
iv. To identify the possible means of improving productivity in the Lagos State Industry.

1.5. Justification of the study

Any improvement in construction productivity would make substantially beneficial to the national economy. Higher production output, lower inflation rate, and further productivity growth could be benefited from productivity improvement. Owning to the economic downturn in Nigeria's economy, the construction industry should subsequently improve productivity to stay competitive (Osabutey, Williams, & Debrah, 2014). The foreign contractors have been successful in Nigeria construction, it may soon become a treat to Nigeria contractors. However, the local contractors generally do not have incentives to improve productivity, and it would become the main cause if they are likely to be substituted by foreign contractors.

1.6. Scope of the Study

The scope is limited to the Lagos State construction industry. The research work will identify the training and retraining opportunities available to the building construction labour in the aforesaid area.

2.0 Literature Review

2.1 Global View of Construction Productivity

Productivity is one of the noteworthy components of every company's success and competitiveness in the construction market. A construction contractor stands to gain or lose, depending on how well his company's productivity responds to competition. Construction productivity improvement is a key issue for businesses and nations to increase profitability, reduce costs, create and sustain competitive advantage. To remain world-class players in a highly competitive global market, construction decision-makers must promote individual productivity strategies that match business needs (Dul, Bruder, Buckle, Carayon, Falzon, Marras& van der Doelen, 2012).

2.2 Construction Productivityin Nigeria Context

The prevailing harsh economic climate in the country has made productivity to be at low ebb. However, other factors have hampered the productive capacity of labour in Nigeria's construction industry. Some of these factors are the workers' technical and attitudinal skills coupled with the educational background and the management and technology available for the industry.

2.3 Factors Affecting Construction Productivity

The factors affecting the productivity in Nigeria's construction industry are many and varied, namely shortage of building materials, poor method of construction, inclement weather during construction works, absenteeism on a prolonged scale, and lastly failure of contractors to recognize the importance of plant, tools and worker training as means of increasing their productivity (Kamal, Abas, Khan, & Azfar, 2019). The term "productivity" itself has various connotations. In one context it may mean the substantive analysis of the technology and operating system of a factory. In another, it might mean the subtle motivational aspects of the management of the efforts of a white-collar workforce. The emphasis might be on long-range improvement in financial results through inventory control. Productivity is a measure of how well resources are brought together in organisations and utilized for accomplishing a set of results.

2.4 Opportunities Available for Construction Labour

Improving productivity is a management issue, and the introduction of new techniques or technologies may be necessary but not a sufficient condition. To improve productivity in construction, it becomes necessary to improve methods, improve training programs, enhance worker motivation, improve strategic management and improve procurement management (Ghodrati, Wing Yiu, Wilkinson, & Shahbazpour, 2018). New management thinking, like lean production, has suggested that better labour performance can be achieved by improving the reliability of flows. Lean thinking portrays reliable flows as the timely availability of resources, materials, information, and equipment.Several scholars have identified a range number potential factors which may lead to an improvement in productivity, they have categorized these factors into 9 groups. Poor productivity is a concern because of its effect on costs and competitiveness, the viability of the work at hand, and ultimately on the industry itself. Labour can account for up to a third of the total productive or non-productive time on construction sites (Jansen, Leiser, Wenzelmann, & Wolter, 2015). Its component in the cost of construction has even risen in recent years.

3.0 Research Methodology

3.1 Sources of Data

Data sources for this study were categorized into two primary sources and secondary sources.

3.1.1 Primary Data

This primarily consists of a questionnaire survey to collect primary data and direct field measurements, observations, and one –on- interaction to elicit facts from the professionals in the construction sectors.

3.1.2 Secondary Data

Secondary data was obtained by measuring productivity levels attained before and after training will be put in place through the use of statistical analysis.

3.2 Sample Frame

The sampling frame for this study includes the construction practitioners in Lagos. The sampled population cut across the three categories of practitioners in the area namely construction firms that are large-sized, medium-sized, and small-sized as registered with the Nigerian Institute of Builders' and Architect Registration Council.

3.3 Sampling Procedure and Sample Size

Purposive sampling techniques were employed in the selection of professionals relevant in the built environment, which registered with the relevant with professional institutes in Nigeria they include MNIA, MNIEEE, MIFMA, MNIS, MNIME, MNIStructE, and MNITP, out of which ninety (90) respondents were randomly selected for this study.

3.4 Data Analysis

A descriptive technique was used as a method of analysis of the data obtained in this study. Descriptive, the questionnaire administered was subjected to simple frequencies distributions with frequency tables. Thus, charts such as bar, pie, and plates are used as a graphical illustration of the findings and to support frequency tables. It is based on descriptive-analytical techniques that conclusions and decisions were made in this research.
Precisely, each objective was treated as follows:

Objective1: Identify the formal and informal training and re-training opportunities available to building construction labour in Lagos. Data collected on these were represented using frequency tables and pie charts.

Objective 2: assessing the nature, duration, and relevance of such training to the Nigerian construction industry in the study area. Data collected on these were analysed using frequency tables, pie charts and relative index means.

Objective3: determining the rewards placed on each construction labour in the study area. Data collected on these were analysed using frequency tables, plates, and relative Anova.

Objective 4: Identify the possible means of improving productivity in the construction section in the study area. Data collected on these were analysed using cross-tabulation.

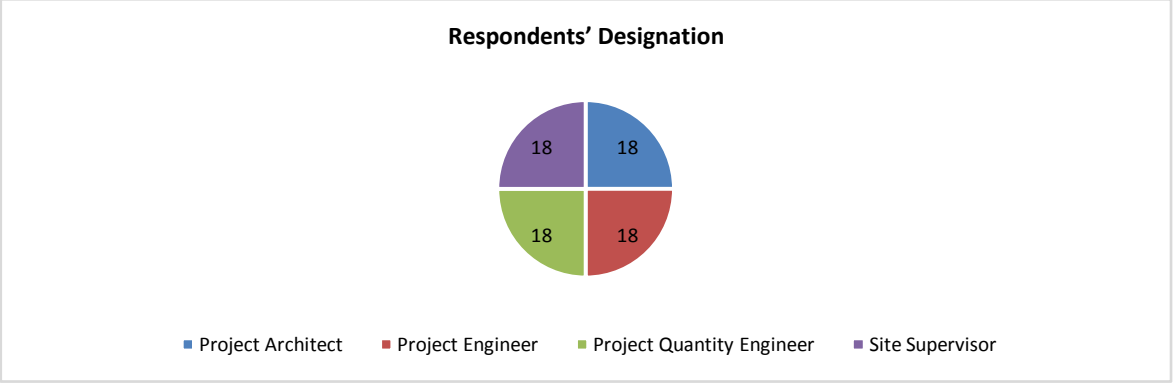
4.0 Findings and Discussions

4.1 Findings

This section discussed findings based on the data collected from the field survey conducted in among registered professionals in Lagos State built environment. The study on table 4.1.1 presents a study on the designation of respondents. From this, the result of the findings shows that 20% 0f sampled respondents were architects, 20% were engineers, 20 quantity engineers, 20% were foreman and another 20% were project site supervisors. This implies that questionnaires were equally distributed among relevant profession active during the construction project.

Table 4.1.1 Respondents' Designation

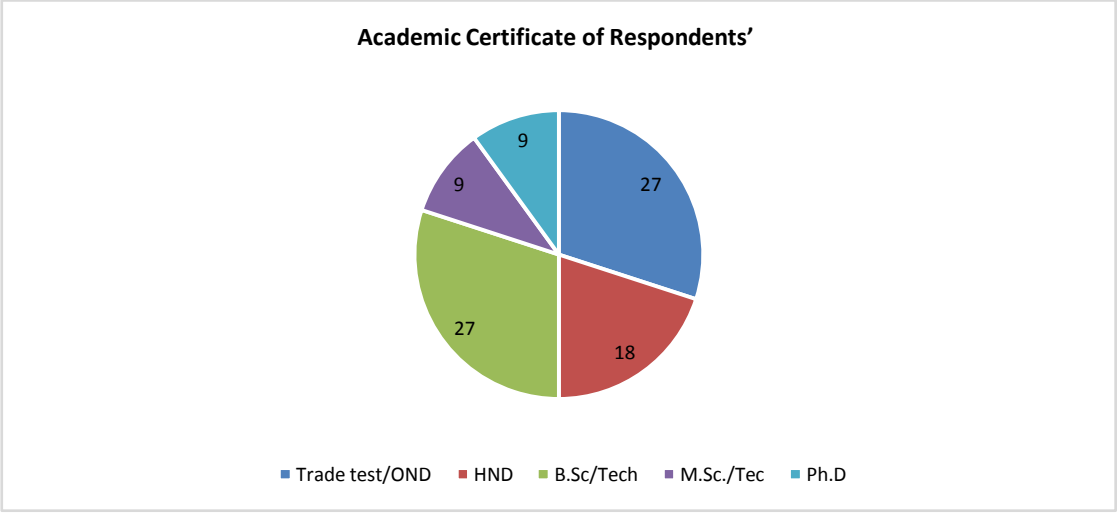
Designation	Frequency	Percent
project architect	18	20
project engineer	18	20
project quantity engineer	18	20
project foreman	18	20
site supervisor	18	20
Total	90	100



As reviewed in table 4.1.2 about the academic certificate of respondents. The result of the findings shows that 30% out of the sampled respondents had trade test/national diploma certificate, 20% had higher national diploma certificate, 30% possessed bachelor of science or technology certificate, another group of respondents had 10% master of science/technology certificate, however, the remaining 10% had a doctor of philosophy certificate. The implication of this is that respondents were choosing across academic levels.

Table 4.1.2: Academic Certificate of Respondents

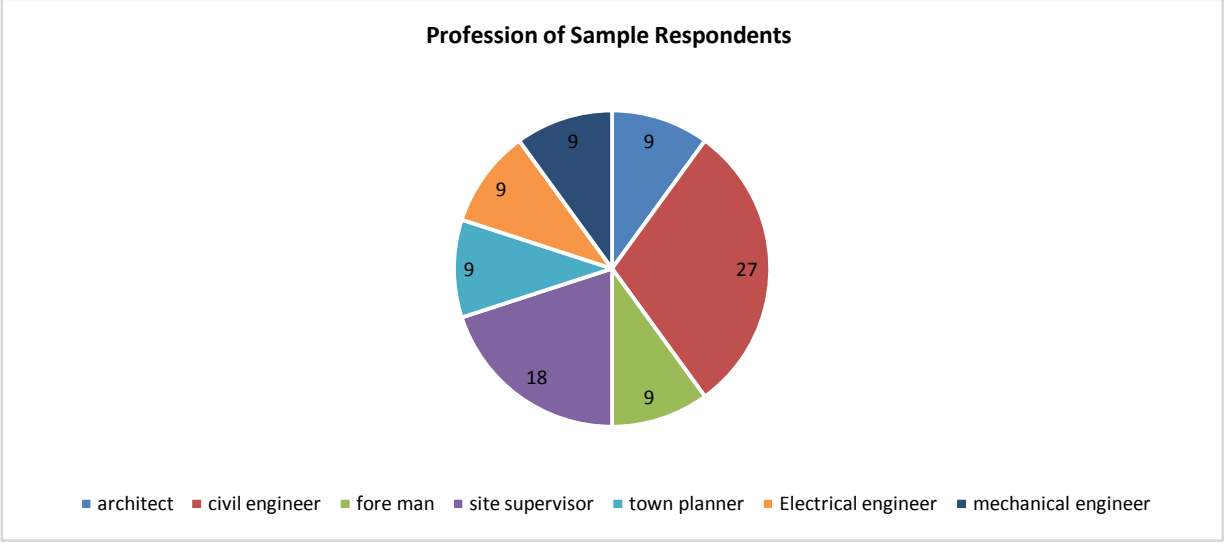
Qualification	Frequency	Percent
Trade test/OND	27	30
HND	18	20
B.Sc/Tech	27	30
M.Sc./Tec	9	10
Ph.D	9	10
Total	90	100



The study on table 4.1.3 shows that 10% out of the sampled respondents were architects, 30% were civil engineers, another 10% were foreman/facility managers, 20% were site supervisors, 10 were town planners, 10% were an electrical engineer and the remaining 10% were mechanical engineers. This relevant of this is that all experts were involved in data collection.

Table 4.1.3: Profession of Sample Respondents

Profession	Frequency	Percent
architect	9	10
civil engineer	27	30
foreman	9	10
site supervisor	18	20
town planner	9	10
Electrical engineer	9	10
mechanical engineer	9	10
Total	90	100



The result of findings on table 4.1.4 shows that an averagely of 20% of sample respondents had 5 years' experience in practice, 20% had between 5-10 years' experience in practice in the built environment, 20% of another set of respondents had between 11–15-year practices experience, also, another set of respondents' 20% had between 16-20years practice experience, however, the remaining 20% of respondents had above 21years practice experience in the built environment.

Table 4.1.4 Respondent' Years of Practice Experience

Years of Experience	Frequency	Percent
less than 5years	18	20
5-10years	18	20
11-15years	18	20
16-20years	18	20
21 years above	18	20
Total	90	100

Study on table 4.1.5 about finding on professional qualification of respondents' shows that 10% of the respondents had professional qualification with MNIA and MNIEEE respectively another 40% of respondents had professional with MNIFMA, further, another group of respondents had professional qualification with MNIS, MNIStrutE, MNITP respectively.The presentation in table 4.1.6, presents a study on frequencies of the project that the sample respondents participate in. However, the result of the findings shows that 10% of the sampled respondents had participated in not less than 5 projects, also, 20% of other sampled respondents had participated in the project between 5-10 projects respectively, further 30% of sampled respondents had also participated between 16-20 project. Hence, the remaining 20% had participated in the project above 21. The study revealed that the majority of respondents had a sufficient wealth of experience.

Table 4.1.5: Professional Qualification of Respondents

Professional Qualification	Frequency	Percent
MNIA	9	10
MNIEEE	9	10
MIFMA	36	40
MNIS	9	10
MNIME	9	10
MNIStructE	9	10
MNITP	9	10
Total	90	100

Table 4.1.6: Frequency of Number of Project Participate

Number of Project Participate	Frequency	Percent
less than 5	9	10
5-10	18	20
11-15	18	20
16-20	27	30
Above 21	18	20
Total	90	100

Table 4.1.7 presents a study on the frequencies of training respondents received. The results of the findings show that 30% of respondents undergo training annually, another 20% of the respondents' training was bi-annual. Also, 30% of respondents' training was quarterly i.e., three times per year. Further, another 10% of respondents' training was monthly, and the remaining 10% of respondents' training was once per three years. The variation in the frequencies of training may be due to cadre, area of specialization, position, and role within the organization setting. However, irrespective of this, respondents still undergo training of one kind or the others.

Table 4.1.7: Frequency of Training

Qualification	Frequency	Percent
Annually	27	30
Bi-annual	18	20
quarterly	27	30
Monthly	9	10
Once per three years	9	10
Total	90	100

Table 4.1.8 presents a study on employee views on relevant training on productivity. The result of the study firmed it that such training undergoes individual or finances by the employers were tremendously useful, important and aimed towards development of works in modern, latest and in day-to-day skills and technology, with the prime aim boosting productivity (see details on table 4.1.8).

Table 4.1.8: Relevant of Professional Training

Relevant of training	Frequency	Percent
NO	9	10
Total	90	100

The result in table 4.2 of descriptive analysis at 95.0% confidence interval level, using bias-corrected and accelerated. The result of bootstrap specifications revealed that respondents agreed that the availability of material at the right time and in the right proportion, increases workers' output/productivity and standardization of construction and reduces cost, time, and high quality of works.

On the other hand, working overtime outside the limit works, without and with compensation adversely affect productivity, cost, work, and even the construction project, other factors are the issues of unavailability of drawings, unclear projects goals and milestone, structure methods, poor access to work area (among are insecurities, poor scaffolds, etc.) design complexity, change orders, the needed information not on the drawings, non-legibility of working drawing not receiving directives as at when due, poor material quality, stoppages because of disputes with owners or consultants all this amongst the factors causing or affecting construction productivity.

Table 4.2 Assessment of Factors Affecting Construction Productivity
Descriptive Statistics

		Statistic	Std. Error	Bootstrap			
				Bias	Std. Error	BCa 95% Confidence Interval	
						Lower	Upper
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Availability of material	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Specification and standardization	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
High quality of required works	Mean	3.90		.00	.00	3.90	3.90
	Std. Deviation	1.382		.000	.000	1.382	1.382
	Variance	1.911		.000	.000	.	.
	Skewness	-.991	.254	.000	.000	.	.
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Availability of drawings	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
Project goals and milestones	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334

	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Working overtime	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Working within a confined space	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Construction method	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Poor access to work area (e.g. poor scaffolds)	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Design complexity	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
	Minimum	1					
	Maximum	5					
Change orders	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
Needed information not on	N	90		0	0	.	.

drawings	Minimum	1					
	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
Drawing legibility	Minimum	1					
	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
Interference	Minimum	1					
	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
Not receiving directives due to size of the project	Minimum	1					
	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
Drawing errors	Minimum	1					
	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
Poor material quality	Minimum	1					
	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80
	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
	N	90		0	0	.	.
Stoppages because of disputes with owners/consultants	Minimum	1					
	Maximum	5					
	Mean	3.80		.00	.00	3.80	3.80

	Std. Deviation	1.334		.000	.000	1.334	1.334
	Variance	1.780		.000	.000	1.780	1.780
	Skewness	-.930	.254	.000	.000	-.930	-.930
Valid N (listwise)	N	90		0	0	.	.

Summary of Findings, Conclusion, and Recommendation

5.1 Summary of the Findings

This section discussed findings based on the data collected from the field survey conducted in among registered professionals in Lagos State built environment. The study on table 4.1.1 presents a study on the designation of respondents. From this, the result of the findings shows that 20% 0f sampled respondents were architects, 20% were engineers, 20 quantity engineers, 20% were foreman and another 20% were project site supervisors. This implies that questionnaires were equally distributed among relevant profession active during the construction project.

On the issues relevant to the training opportunities available to building construction labour in Lagos. The results of the study show that 20% 0f sampled respondents' were architects, 20% were engineers, 20 quantity engineers, 20% were foreman and another 20% were project site supervisors; that 30% out of the sampled respondents' had trade test/national diploma certificate, 20% had higher national diploma certificate, 30% possess a bachelor of science or technology certificate, another group of respondents' had 10% master of science/technology certificate, however, the remaining 10% had a doctor of philosophy certificate. Also, 10% out of the sampled respondents were architect, 30% were civil engineer, and another 10% were fore man/facility manager, 20% were site supervisor, 10 were town planners, 10% were electrical engineer and the remaining 10% were mechanical engineers; averagely of 20% of sample respondents' had 5 years' experience in practice, 20% had between 5-10 year experience in practice in the built environment, 20% of another set of respondents' had between 11-15 year practices experience, also, another set of respondents' 20% had between 16-20years practice experience, however, the remaining 20% of respondents' had above 21years practice experience in the built environment. Further, the study shows that 10% of the respondents had professional qualification with MNIA and MNIEEE respectively another 40% of respondents had professional with MNIFMA, further, other groups of respondents had professional qualification with MNIS, MNIStrutE, MNITP respectively.

Findings on the relevance of such training to the Nigerian construction industry revealed that 10% of the sampled respondents had participate in not less than 5 project, also, 20% of another sampled respondents had participated in project between 5-10 projects respectively, further 30% of sampled respondent had also participate between 16-20 project. Hence, the remaining 20% had participate in project above 21. Hence, that 30% of respondents further, undergoes training annually, another 20% of the respondents' training were bi-annual. Also, 30% of respondents' training were quarterly i.e., three time per year. Further, another 10% of respondents' training were monthly, and the remaining 10% of respondents' training were once per three years. The result of the study firmed (90% of sampled respondents') it that such training undergoes individual or finances by the employers were tremendously useful, important and aimed towards development of works in modern, latest and in day-to-day skills and technology, with the prime aim boosting productivity.

The result of bootstrap specifications revealed that respondents agreed that availability of material at the right time and in the right proportion, increase workers output/productivity and standardization of construction and reduces cost, time and high quality of works. In the other hands, working overtime outside the limit works, without and with compensation, inadequacy of site personnel, adequate knowledge of project, poor material quality and poor quality of professionals and workmanship adversely affect productivity, cost, work and even the construction project, another factors that affect are the issues of unavailability of drawings, unclear projects goals and milestone, structure methods, poor access to work area (among are insecurities, poor scaffolds etc.) design complexity, change orders, the needed information not on the drawings, non-legibility of working drawing not receiving directives as at when due, poor material quality, stoppages because of disputes with owners or consultants all this amongst the factors causing or affecting construction productivity.

5.2 Conclusion

Based on the objectives of the study stated, the following conclusions were made in relation to the findings:

i. The main factors affecting construction productivity construction include; inadequacy of site personnel, compensation/non-payment of overtime adequate knowledge of project, poor material quality and poor quality of professionals and workmanship.

ii. The major practices profession that employers adapt with to improve and enhance quality management are; proper site supervision, training of employees on the need for quality, quality appraisal and compliance to quality standards.

iii. There are significant different in the effect of employee training was discovered on the descriptive, however, this may be due to the most important practices or needs in the firm.

Acknowledgements

All glory be to God. We can do all things through God our strength.

REFERENCES

Adedokun, O. A., Ibironke, O. T., & Olanipekun, A. O. (2013). Vulnerability of motivation schemes in enhancing site workers productivity for construction industry's sustainability in Nigeria. International Journal of Sustainable Construction Engineering and Technology, 21-30.

Ayegba, F. F., Adeagbo, D., & Ayegba, C. (2018). Assessment of the Impact of Skills Acquisition on the Productivity of Nigerian Construction Craftsmen. Conference on Engineering, Project, and Production Management (EPPM) (p. 2018). Nigeria: EPPM.

Dul, J., Bruder, R., Buckle, P., Carayon, P., Falzon, P., Marras, W. S., & van der Doelen, B. (2012). A strategy for human factors/ergonomics: developing the discipline and profession. Ergonomics, 377-395.

Fagbenle, O., Phillip, L., & Omuh, I. (2012). The Influence of training on Bricklayers' productivity in Nigeria. International Journal of Management Sciences and Business Research, 1(7).

Frolova, E. E., Zankovsky, S. S., Dudin, M. N., Zinkovsky, S. B., & Kirsanov, A. N. (2018). Studying concepts of the breakthrough economic reforms in selected developed and developing countries and regions of the world: economic and legal aspects. J. Advanced Res. L. & Econ, 1236.

Ghodrati, N., Wing Yiu, T., Wilkinson, S., & Shahbazpour, M. (2018). Role of management strategies in improving labor productivity in general construction projects in New Zealand: Managerial perspective. Journal of Management in Engineering, 34(6), 040180.

Jansen, A., Leiser, M. S., Wenzelmann, F., & Wolter, S. C. (2015). Labour market deregulation and apprenticeship training: A comparison of German and Swiss employers. European Journal of Industrial Relations, 353-368.

Kamal, A., Abas, M., Khan, D., & Azfar, R. W. (2019). Risk factors influencing the building projects in Pakistan: from perspective of contractors, clients and consultants. International Journal of Construction Management, 1-17.

Kasimu, A. M., & Isah, A. D. (2012). Causes of delay in Nigeria construction industry. Lagos: Construction Industry.

Lee, J. S., Son, S., Kim, S., & Son, K. (2021). Correlation analysis of safety climate and construction productivity in South Korea. International journal of occupational safety and ergonomics, 589-596.

Niyonkuru, F. (2016). Failure of foreign aid in developing countries: A quest for alternatives. Business and Economics Journal, 1-9.

Odesola, I. A., & Idoro, G. I. (2014). Influence of labour-related factors on construction labour productivity in the south-south geo-political zone of Nigeria. . Journal of Construction in Developing Countries, 93.

Osabutey, E. L., Williams, K., & Debrah, Y. A. (2014). The potential for technology and knowledge transfers between foreign and local firms: A study of the construction industry in Ghana. . Journal of world business, 560-571.

Tsehayae, A. A., & Robinson, F. A. (2014). Identification and comparative analysis of key parameters influencing construction labour productivity in building and industrial projects. . Canadian Journal of Civil Engineering, 878-891.

Ugochukwu, S. C., Okolie, K. C., Alintah-Abel, A., Uchechi, V., & Keke, O. V. (2019). HOUSING BUDGET IMPLEMENTATION AND DEVELOPMENT MILESTONES IN ANAMBRA STATE, NIGERIA. . Tropical Built Environment Journal, 6(2).

Yap, J. B., Chow, I. N., & Shavarebi, K. (2019). Criticality of construction industry problems in developing countries: Analyzing Malaysian projects. Journal of Management in Engineering, 04019020.

Zhai, X., Reed, R., & Mills, A. (2014). Factors impeding the offsite production of housing construction in China: an investigation of current practice. Construction Management and Economics, 40-52.