Performance Evaluation of Labour Output of Indigenous Construction Firms in North- Central Nigeria.

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Abstract

This paper evaluates the performance of labour output of indigenous contractors in the North Central Nigeria with a view to measure on site, the labour output of selected craftsmen as well as structured questionnaire targeting the clients – all as a measure of indigenous contractor's performance. The data were collected through work sampling techniques and structured questionnaire designed on likert scale of 1-3. Analysis of the data was done using mean item score and direct calculation of performance using formula. The results indicate that the performance of the indigenous contractors were above average with a performance level of 0.56. The performance Ability Ratio (PAR) was 1.07 indicating that there are grater potentials for the indigenous contractors to improve. All the firms investigated scored above 0.50 on the mean item scale. This means that all the measures of performance considered were very important. Technical competence was ranked as the overall most importance of the clients measured of performance. The study concluded that the indigenous contractors perform above average contrary to the believe of the general public in Nigeria. The study also recommended that Nigerian government should consider indigenous contractors in their projects.

Introduction

Competence in management of construction projects is a goal which every construction managers and contractors are aspiring for. Bringing together the many diverse elements of construction- labour, machines, materials and management talents and successfully organizing them into existence of a new structure is an extremely creative and satisfying endeavour [1].

Many project managers and contractors perform differently. Some project managers and contractors make money while others loose it. Many claim that the difference between profit and loss depend on experience and judgment.

Performing well or bad on construction site is attached to so many variables in construction that is beyond only experience and judgment as claimed by some contractor.

Balogun [3] opined that contractors poor performance could be seen in the form of cost overrun, rework, late completion high accident rate, poor work practice, insensitivity to environment consideration.

Iyagba and Ayandele [2] grouped these variables or factors into Human capacity for work, competence of management, motivation factors, nature of job, and cultural/Religious influence. Similarly, Thomas, [4] categorized the factors affecting the performance output of contractors on site as project characteristics and work sampling study procedures. Wahab[5], Bain [6] Makulsawatudon and Emsley, [7], Orth et al [8], opined that on a construction site, the performance out put of contractors are affected by: Type, scope, layout and complexity, time frame, construction methods, weather, skill of workforce, work practices, length of work day, availability of materials, degree of supervision, Enabling environment, Government regulation and organizational size and maturity. Performance can be measured in order for it to be improved [14].

Oloko [9] categorized factors that affect performance of workers as:

i) Factors in the employment

ii) Factors in the individuals

iii) Factors in life outside of employment situation

Nkado, [10], Arditi Walker, [11] identified that construction productivity, cost and time, and quality are the critical success/performance factors for a construction project. Similarly, SWIES et al [12] opined that scope of planning and scheduling, controlling of cost, workers performance, estimating and accounting are indicators of construction time performance.

An emerging science of construction management holds that every manager from the weakest to the strongest can improve job site performance [1].

Improvement only requires that management knows what to improve and how to improve them.

Contractors are constantly searching for ways to improve their performance especially there onsite labour output. Labour constitute about 30 – 50% of the total cost of construction projects, thus improving labour productivity of construction firms will enhance their general performance [2]. Since labour is of the greatest risk in construction contract it must be controlled and continuously improved [13]. The contractor with most efficient operation has a greater chance to making more money, deliver faster construction project to the project owner within time and budget [17, 15, 18].

One of the assured ways of improving performance on construction site is by measuring the output of the operatives. Measurement of such output provides management with invaluable feedback to guide daily decision making. It helps in supplying the management with information's that can turn average managers to an exemplary performers [1, 13, 16, 19].

Statement of Research Problem/Question

Indigenous contractors in Nigeria have over the years suffered untold hardship of discrimination from project owners (clients). The major reason(s) advanced by clients were simply that the Nigeria contractors are incompetent. They can not perform to the satisfaction of their customers (clients) [3].

This assertion has creates an atmosphere of fear and uncertainty among the indigenous firms in Nigeria. The governments which account for about 80% the clients in Nigeria and who suppose to be the last hope of the indigenous contractors is not helping matter as she hardly give out her projects to purely indigenous contractors. This statement can easily be confirm without much stress by simply taking the statistics of the previous and on going government projects in Nigeria and see how many of the contractors are purely indigenous contractors.

This situation has forced some indigenous construction firms out of bushiness. The question(s) that needed to be ask and which this research work intended to provide solutions to are:-

1. What were the criteria being used for measuring the performance of the indigenous contractors?
2. Where the performance of the indigenous contractors actually poor?
3. What are the factors responsible for the poor performance, if really poor?
4. How can this poor performance be improved?

Though Balogun [3] concluded that the performance of Nigeria indigenous contractors were high. However, his research has some shortcomings as follows:-

a. The source of data for the research was purely based on questionnaire only. Performance can not be truly measured by questionnaire alone because performance has three major variables- Quality, Time and cost which cannot be measured by asking question(s). Therefore conclusion drawn from such results could be misleading.

b. The geographical spread of the sampled population for the research is too narrow, to generalized about the entire Nigerian construction industry.

It therefore becomes necessary to carry out a research that will bridge these caps which is the intention of this study.

Aim and Objectives

The aim of this research is to evaluate labour output of indigenous contractors in the North Central Nigeria. The specific objectives include:

1. To measure on site, the performance of some selected indigenous contractors through work sampling.
2. To determine the performance level of the indigenous contractors and compare with standard.
3. To identify factors influencing the performance of indigenous contactors in North Central Nigeria from client perception.
4. To suggest possible ways of improving performance of indigenous contractors.

Methodology

This research was set out to evaluate the performance of indigenous construction firms in North Central Nigeria. The need to obtain data from different sources necessitate the use of more that one method of data collection.

Data Collection

The data for this research was collected from two major sources. The secondary and primary sources. The secondary data were collected through journals articles, conference proceeding and past work, which was used to achieve objective three (3) in this work. The primary data involve the data from field survey which consist of data from direct measurement of output of the operatives on site and data from structured questionnaire which were used to achieve objective one and two.

Fifteen indigenous construction firms were sampled randomly from the population of the indigenous construction firms and monitored and the data generated there form a reflection of the indigenous firms in North Central - Nigeria. The North Central Nigeria consist of six states namely: Benue, Kogi, Kwara Nassarawa and Niger State.

Data for direct measurement of output on site were collect through work sampling with craftsmen at active operative level as the target group. A structural questionnaire was designed on like scale of 1-3, having the client as the target group. On the scale, High = 3, Moderate = 2, L=ow = 1.

The clients were sampled at random from private, individuals and government organizations across the six states of the north central Nigeria which form the population for the clients.

A total of 150 questionnaires were administered across the selected sampled population out of which 120 questionnaires were dully completed and returned for analysis.

The analysis of the data collected took two forms based on the source of the data

Data collected through work sampling on site was analyzed using formular for calculating performance, performance Ability Ratio. The performance scale ranges from 0-1.

Performance = accomplishment……………..1

Methods

Performance Ability Ratio (PAR) = Exemplar performance (Px) …………2a

Current Performance (Pe)

PAR = Px…………….2b

Pe

Data collected through questionnaire was analyzed using mean item scores (mis)

Mis   =   3N5+   2 N2 + N)

3 (N3 + N2 + N)

Result and Discussion

Table 1. Analysis of performance output of Construction Firms

Construction Firm	Average Performance	Exemplar Performance	Performance Ability Ratio (P.A.R)
A	0.5	0.53	1.06
B	0.3	0.33	1.10
C	0.53	0.58	1.0
D	0.52	0.58	1.08
E	1.08	1.19	1.10
F	0.51	0.54	1.06
G	0.31	0.37	1.19
H	0.52	0.55	1.06
I	0.26	0.29	1.12
J	1.05	1.10	1.05
K	0.53	0.54	1.02
L	1.04	1.09	1.05
M	0.27	0.29	1.07
N	0.51	0.53	1.04
O	0.50	0.57	1.04
Overall Average	0.56		1.07

Table 1 above shows the analysis of performance output of fifteen indigenous construction firms in North central Nigeria. The monthly performance and average monthly performance of the firms were computed and analyzed. Monthly output for the sampled population shows little variation in the crew performance. The result shows that the craftsmen are performing at a relatively the same level.

On the whole, the average monthly output shows that 46.67% of the indigenous construction firms performance averagely with 0.56 level of performance, while 26.67% performed excellently with 1.0 level of performance. On the other hand 26.66% of the firm performed poorly with 0.29 level of performance. In general the overall average performance was 0.56. This indicates that the indigenous construction firms from measurement of craftsmen output on site performed a little above average. This is contrary to the general public negative perception of the indigenous firms-saying indigenous construction firms can not perform. The perform distribution for the sampled firms for this study is shown in fig 1.
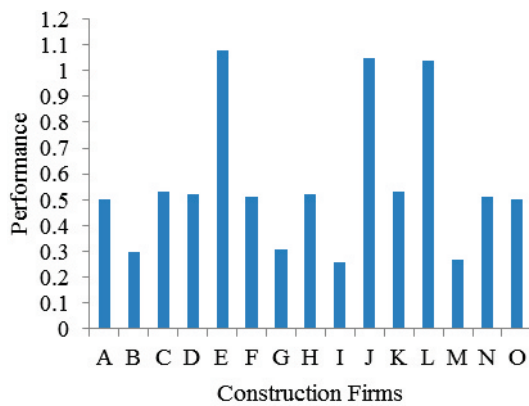
Fig. 1. Performance distribution of Construction firms in North Central Nigeria.

The performance Ability Ratio (PAR) was computed. The PAR can be used to compare current performance of the company/firm to the exemplar performance. It is used as a measure of relative worth of jobsite performance. The higher the PAR values the more chances of improvement for the firm [3]. Performance Ability Ratio value of 1-1.5 shows that there are chances of improvement for such firms [3]. The overall average PAR for the sampled population for this study was 1.07. This indicates that in all the construction firms sampled, there are grater potentials of improvement in their performance.

From the data collected through questionnaire. The numerical scores were transformed to mean item scores (MIS) so as to determine the ranking of the measures of performance. The mean item scale ranges from 0 -1. Table 2 below show the mean item scores and overall ranking of the construction firm in the North Central Nigeria.

Table 2. Client's measurement of performance

Measures of performance	Level of performance			Mis	Over-all Ranking
	Low	Mode-rate	High		
Technical competence	1	60	59	0.83	1
Technical capacity	6	59	55	0.80	2
Management capacity	10	60	50	0.78	3
Project of Management ability	10	58	52	0.78	3
Quality of work	0	70	42	0.76	4
Site Management ability	10	65	45	0.76	4
Communication	5	87	28	0.73	5
Relationship with site neighbor	17	65	38	0.73	5
Level of additional claims	19	68	33	0.71	6
Level of security on site	20	65	35	0.71	6

Contractors' relationship with client	20	66	34	0.71	6
Industrial relation	19	70	31	0.71	7
Working on schedule	22	70	28	0.68	8
Workers' welfare	23	68	29	0.68	8
Workers' budget	25	68	27	0.67	9
Safety	27	68	25	0.66	10
Level of cost overoom	26	69	25	0.66	10
Level of time overcome	29	65	26	0.66	10
Effective of project	29	68	23	0.65	11
Health facilities on site	35	62	23	0.63	12
Material waste	50	50	20	0.58	13
Storage	53	49	18	0.57	14

Low = 1, Moderate = 2, High = 3, N = 120

From table 2, the study reveals that all the construction firms under consideration scored above 0.50 on the mean item scale. This implies that the respondents considered all the measures (variables) of performance to be very important when assessing the performance of contractor handling their projects. Also table 2 indicates that overall, technical competence was ranked as the most important of their measure of performance. This was followed by technical capacity, management capacity and project management ability. The last was storage facilities.

Looking at the two methods used in measuring the performance of contractors in this study, it was revealed that the most important variable for measuring contractor's performance from client's perception was technical competence. Fortunately, the on site measurement of the contractors performance in this study was based on technical competence. The result of the on site measurement shows that technically the indigenous contractors are above average in performance. This is good news to the indigenous contactors and contrary to the believe of the general public in Nigeria that indigenous contractors perform poorly. From the review of relevant literature and personal interview with clients, it was reveal that twenty-two (22) factors as listed in table 2 have significance influence on the performance of the indigenous contractors in the North Central Nigeria.

CONCLUSION
Base on the findings of the research, the following conclusion was arrived at:-
- Indigenous contractors performed above average contrary to the believe of the general public in Nigeria
- Technical competence was ranked the most importance by client out of the project variables followed by technical capacity and management capacity and the last was storage facilities.
- Client considered all the variables used to measure contractors performance very important.

RECOMMENDATION
To further improve the performance of the indigenous construction firms in the North Central Nigeria, the following were recommended.
- Indigenous contractors should carry out periodic studies on client's need evaluation to ascertain the current needs of clients so as to meet their expectation.
- Indigenous contractors should enhance the welfare of their workers especially the technical staff to improve their output on site and their general performance.
- Recommendation is also made to the clients especially, the government to consider the indigenous contractors for her project as it has been proved that the performance of the indigenous contractors are above average.

- Lastly recommendation was made for further studies to be carried out in the same area of research considering the following.
a. The factors affecting the performance of indigenous contraction firms in Nigeria.
b. Increasing the sample by also increasing the geographical spread of the study.
c. Comparing the performance of the indigenous construction firms and foreign firms from craftsmen and management perceptions.

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