THE NIGERIAN JOURNAL OF ENERGY & ENVIRONMENTAL ECONOMICS

AEEEN ASSOCIATION FOR ENERGY & ENVIRONMENTAL ECONOMICS OF NIGERIA
www.aeeeng.org

OVERVIEW

Research Expenditure In Nigeria And The Phenomenon Of Brain Drain: A Critical Analysis - *Uche C.C. Nwogwugwu & Uzochukwu Amakom*

A Critical Appraisal Of Effects Of Globalization On The Operational Performance And Productivity Of The Nigerian Maritime Industry - *Obed, B.C. Ndikom & Nwokoro, I.A.*

Spatio-Temporal Characterization Of Good Governance, Transparency And Due Process In Infrastructural Development And Management At The Micro-Level - *Ngozi Christian UME & Angela Iweka Enwereuzor*

Beyond The Mosaic Of Bureaucratic Reforms: A Review Of The Guiding Principle And The Challenges To Reform Efforts In Nigeria - *Albert, T. Akume, Abdullahi, Yahaya & Solomon Michael*

Some Aspects Of Urban Mass Transit Performance In The Federal Capital Territory Of Nigeria - *Obioma R. Nwaogbe, S. I. Ukaegbu & C.C. Ibe*

An Empirical Study Of Productivity - Morale Relationship Among Construction Workers In Nigeria - *Chinedu Chimdi Adindu & Azubuike John Oyoh*

A Perceptual Assessment Of Delay Factors In Nigerian Ports Operation. - *G.C. Emeghara*

Volume 5, No. 5, June 2011 ISSN: 2006-8395

TABLE OF CONTENT

Nigerian Journal of Energy and Environmental Economics

Overview i

Table of Content v

Research Funding In Nigeria and the Brain Drain Phenomenon: A Critical Analysis
Uche C.C. NWOGWUGWU and **Uzochukwu AMAKOM** 1

A Critical Appraisal of Effects of the Economics Of Globalization On The Operational Performance and Productivity Of The Nigerian Maritime Industry
Obed, B.C. NDIKOM and NWOKORO, I.A. 1

Spatio-Temporal Characterization Of Good Governance, Transparency And Due Process In Infrastructural Development And Management At The Micro-Level
Ngozi Christian UME and Angela Iweka ENWEREUZOR 25

Beyond The Mosaic of Bureaucratic Reforms: A Review Of The Guiding Principle and the Challenges to Reform Efforts In Nigeria.
Albert, T AKUME ,Abdullahi, YAHAYA and Solomon MICHAEL. 32

Some Aspect S of Urban Mass Transit Performance In The Federal Capital Territory Of Nigeria
Obioma R. NWAOGBE, S.I. UKAEGBU and C.C. IBE 45

An Empirical Study of Productivity- Morale Relationship among Construction Workers in Nigeria
Chinedu Chimdi ADINDU and Azubuike John OYOH 55

A Perceptual Assessment of Delay Factors In Nigerian Ports Operation.
G.C EMEGHARA 64

AN EMPIRICAL STUDY OF PRODUCTIVITY- MORALE RELATIONSHIP AMONG CONSTRUCTION WORKERS IN NIGERIA

Chinedu Chimdi ADINDU
Department of Quantity Surveying,
School of Environmental Design Technology
Abia State Polytechnic, Aba, Nigeria
Email: *qscadindu@yahoo.com*
+234-803-490-9898
&
Azubuike John OYOH
Department of Quantity Surveying,
School of Environmental Design
Federal Polytechnic, Nekede Nigeria
Email: azubuike.oyoh@yahoo.com
+234-803-393-7679

Abstract

The Nigerian construction industry has over the years been attributed with problems of low productivity. The issue of workmen morale has remained central in the wide consideration of factors that lead to low productivity in the industry. The study aims at determining the extent to which productivity relate to workmen morale in the construction industry. The research design was by descriptive survey. The population of study involved 90 medium-large sized limited liability and publicly quoted construction firms operating in the six geo-political zones of Nigeria, from which a sample size of 42 contracting firms was selected by a combination of purposive judgmental sampling and proportionate allocation techniques. Research instruments included both the personal interview method and a structured questionnaire; while hypothesis testing employed the t-test statistical technique. The results of the study showed that productivity targets were hardly met by workers, while revealing a significant relationship between construction productivity and construction workforce morale. The study concludes that certain motivators like job security, fringe benefits; and certain de-motivators like bad treatment by supervisors, non-recognition of effort affect workers morale. The study among others recommends the adoption of a procurement strategy that ensures sustained activity of firms and job security of the workers.

KEYWORDS: Productivity, Morale, Construction Workers, Motivators, De-motivators
JEL: M52, M54

INTRODUCTION

The Nigerian construction industry has continued to play a fundamental role in national development since the post war era. The industry accounts for about 60% of the nation capital investment and 30% of the Gross Development Product (GDP) (Olowo- Okere, 1988). It is also a major contributor to the national economy, having contributed about half of the total stock of fixed capital investment in the economy (Olaloku, 1987).

Ndekwu (1988) posits that the behavioural pattern between Building construction and the National Gross Domestic Product is anticipated in the economic theory of business cycle. This theory posits that strong and positive relationship exists between the cyclical movement of activity in the

construction industry and the cyclical movement of the aggregate output of the Gross Domestic Product and Employment.

Construction activity in Nigeria is extremely diverse, ranging from simple housing developments to highly complex infrastructure projects; its activities include:
a) Creation of infrastructure facilities – This involves projects like power stations, airports, roads, water schemes, hospitals and administrative facilities.
b) Provision of industrial facilities – This involves the provision of buildings and other utilities in order to enhance production and earning capacity of industries; including factories, workshops and offices.
c) Provision of accommodation and recreational facilities – Such projects include housing schemes, churches, mosques, sports facilities and recreational centres, etc.
The construction industry worldwide accounts for a sizeable proportion of economic activities. For example, in Europe, it accounts for 10% of the gross domestic product (GDP) (Loosemore, et al, 2003); in Australia it employs about 8 % of the nation's workforce(Proverbs, et al, 1999); in Nigeria, the construction industry employs 10% of the total labour force, while its contribution to the total Gross Fixed Capital Formation was 64.53% in 1994/95 time period.

The large investment commitment in the construction industry sub sector makes it an important source of economic activity and employment generation. Until the industrial revolution, the construction industry was essentially craft based and founded on simple tried and tested traditional technologies and simple production methods (Loosemore, et al, 2003).

Statement of the Problem:
Despite recent advances in technology and production management techniques, human resources construction remains represent a large majority of costs on most projects in the construction industry, being one of the most people-reliant industrial sectors. It is widely believed that casual workers in building construction companies, exhibit low work productivity despite incentive schemes. Also, a Canadian report states that an average construction worker is occupied productively for only 55% of his workday while the remaining 45% is spent on activities necessary to perform the productive work and on non-productive operations.

Thus, the issue of construction workforce productivity has attracted a growing interest among construction industry stakeholders and scholars alike.
The major objective of this study is-
(a) to determine if significant relationship exist between the productivity and morale of construction workers.
This research is significant in the manpower planning, scheduling and deployment for optimum performance in construction activities since they constitute the bedrock for most other sectors of national economy. The study will also add to the body of knowledge in the area of construction workforce morale and productivity.

1.1 Research Question:
The following research question is crucial and also reflects the objectives of the study.
(a) to what extent is construction productivity related to construction workforce morale?
1.2 Research Hypothesis:
The research hypothesis in line with the objectives of study was formulated as follows:
Alternate hypothesis (H_a):
There is a significant relationship between construction productivity and construction workforce morale.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Construction industry, Productivity status, and Workmen morale.

Civilizations are built on construction efforts, and each civilization has construction industries that foster its growth and quality of life (Peurifoy, et al. 2006). Cartlidge (2010) states that the construction industry comprises the following:

i. General construction and demolition work: establishments engaged in building and civil engineering work not specialized to be classified elsewhere.
ii. Construction and repair of buildings: establishments engaged in construction, improvement and repair of both residential and non-residential buildings, including specialists engaged in sections of construction and repair work such as bricklaying and the erection of steel and concrete structures, etc.
iii. Civil engineering: construction of roads, railways, airport runways, bridges, tunnels, pipelines, etc.
iv. Installation of fixtures and fittings: establishments engaged in the installation of fixtures and fittings including: gas fittings, plumbing, electrical, etc.
v. Building completion work: establishments engaged in work such as, painting and decorating, plastering, onsite joinery, etc.

There is no universally accepted definition of the construction industry; it however includes the numerous general contractors, specialist contractors, consultant architects, engineers, quantity surveyors, building material manufacturers, labour organizations, clients-comprising private and public consumers, and government agencies (Adindu, et al, 1993).

The demand for infrastructure is related to activities in the construction industry.
Although the construction industry is linked to the development of other sub sectors of the national economy, there is a void of explicit sector representation at the level of plan formulation, whereas its contribution to national development is perennially stated (Obadan and Uga, 1996).

Several definitions of the term productivity abound in literature; however, no single definition captures its meaning as a result of diversity of application. It is however, closely linked to concepts like-output, efficiency, yield and production.
Productivity is defined as work done in relation to the resources employed (Adindu, et al, 1993). Eze (1981) defined productivity as "a measure of how well resources are brought together in organizations and utilized in accomplishing a set of results. Oloko (1977) views labour productivity as "the volume of goods and services produced per worker within some specified unit of the year". On the basis of these diverse views, productivity in the construction industry context could be referred to as the "ratio of a unit of construction output to the corresponding unit of construction input". It is suggested that for consistent interpretation of productivity data, it is necessary to include precise descriptions of the input and output units. The most generally accepted is "output per man hour or man-day postulated by McNally (1967). The system makes productivity data at differing periods comparable.

The Nigerian construction industry is plagued with problems of low productivity. A lot of reasons have been adduced to explain the scenario. However, the mass exodus of construction trades to other activities following the inability of most construction firms to implement the rapid increases in wages and compensation amidst pressures by their trade unions, have left behind a crop of workers that are not truly motivated or experienced to achieve desired productivity targets. Studies revealed the following attitudes as common place among Nigerian casual workers:
Tendency towards low productivity feelings of dissatisfaction, often leading to low morale and performance.
Tendency towards productive effort under close supervision

Lack sense of commitment and urgency.

Research work by Adeniji (1984) further avers that at least 25% of each working day of construction operatives was lost to involuntary idleness caused by delays and frictions.

Elems (1985) observation of casual workers in a staff housing estate project located in kano, Northwest Nigeria revealed that only an average of 45% of the 9-hour workday, of the 6- day week period was spent on productive operations. Elems finding are further stated viz:

i. Lateness to work and from break	1hour
ii. Official lunch break	1hour
iii. Truancy	½ hour
iv. Idleness while resolving disputes	1½ hour
v.. Receiving instructions from supervisors	½ hour
vi. Correcting badly done work	½ hour
vii.TOTAL	5 hours
viii. Actual productive work (9-5)	4 hours
ix. Pereentage productive work (4/9 x 100%)	44.40%

The construction working day is broadly divided into attendance time and absence time. The absence time is the period of a workers absence from work during the normal working day or week.

The attendance time is the total period spent by a worker at a workplace for which he is paid. The attendance time is further categorized into relaxation time (break hour plus allowable physiological relaxation time while working), supervision time (time spent taking instructions or inspection delays), productive time (time spent working on assigned activity or sundry works), unproductive time (time spent not working or doing unrelated works). The proportions of these categories of time influence productivity of site activities. The efficiency of site operatives is proportional to the amount of attendance time spent on productive activities. Contemporary management views workers productivity as a function of several factors including-conditions of the work environment, workers' personal life outside the workplace, and the need for self actualization.

A number of other factors are responsible for productive and unproductive time in the workplace, namely-level of supervision, extent of input resources, level of wages, working atmosphere, balance and distribution of resources, and work interference. When a factor increases a workers urge to work, it is referred to as a motivator. On the contrary, if a factor decreases the workers urge to work, it is referred to as a demotivator.

Okwa (1981), states that the effectiveness of various motivators varies with individual personalities. Okwa views human personality as an aggregate of the individual's behaviour, including his interaction with others, acts performed in solitude, thinking and feeling. Studies also reveal that other factors like skill, abilities, competence, experience, methodology, equipment, conditions of work also affect efficiency and site productivity.

Theories explaining the link between motivation and individual personality abound. They include Herzberg's motivation theory, Macgregor's theories X and Y, Maslow's Hierarchy of needs, Ouchi's theory Z, Locke's Goal theory, Brehm's Reactance theory, Equity Theory and Expectancy theory. While most of these theories conflict in explaining the complex relationship between motivation and workforce behaviour, Maslow's Hierarchy of Needs theory mostly explains the hierarchy of perceptiveness, creativity, consciousness and psychological maturity in the workplace (Greig,1984).

Morale is viewed by scholars as the extent to which individual needs are satisfied and the extent to which an individual perceives that satisfaction as stemming from his total job situation. Several research studies have been conducted on the concept of human morale giving rise to the law theory

morale fact theory, the response theory and the emotive theory. Morale is seen as an abstract term that applies to group reactions, and manifests itself in human behaviour, which is somewhat measurable. It takes the form of low productivity, high or low efficiency, frequency or infrequency of absence, complaints, strikes or quarrels within the group. Schaefer (1972) defines a group as "a collection of interdependent individuals with a common objective".

Research streams on group performance show that groups perform better than individually possibly as a result of effort, development of Espirit de Corps, the satisfaction of pleasant social interactions, the groups superior resources, groups influence and motivation often leading to cooperativeness, competitiveness and effectiveness. Studies also indicate that superior performance is exhibited by co-operative groups which evolved by external reward systems based on group performance rather than individual performance in a group.

3.0 RESEARCH METHODOLOGY

A descriptive survey research design was used in conducting this empirical study.
The population of study involved 90 medium-large scale limited liability and publicly quoted construction firms operating in the six geopolitical zones of Nigeria. From this population, a sample size of 42 contracting firms was selected by a combination of purposive judgmental sampling and proportionate allocation techniques.

The selected contracting firms represented the wide variety of a typical Nigerian construction practice in terms of contract sum, number of operatives employed, and site organization. The site organization hierarchies for the firms are relatively similar with the project managers supported by the site managers, general foremen, foremen, change hands and operatives respectively. A personal interview method was used for the purposes of primary data collection with the aid of a well structured questionnaire considering the disparity in literacy level of some of the respondents. The analyses were conducted using frequencies, percentages and means; while the student t -test statistical technique was used for testing the research hypothesis earlier formulated.
Decision Rule: Reject the null hypothesis, h_o if $t_c \geq t_t\ \acute{\alpha}/2$, or if $t_c \leq -t_c\ \acute{\alpha}/2$, for $n_1 + n_2$ degrees of freedom, otherwise accept the alternate hypothesis (h_a), indicating existence of significant difference between the two proportions.

4.0 RESULTS AND DISCUSSION OF FINDINGS

A total of 36 responses were received out of a sample size of 42 contracting organizations selected for the study, thus, representing 86%. The basic enquiries sought were:
i. Expected output per day per gang (EOPG)
ii. Actual output per day per gang (AOPG)
iii. Time Work Commences (TWC)
iv. Time Work Ends (TWE)

TABLE. 1 : Contractors Responses on Expected and Actual output per gang per 8hour day for Masonry and Carpentry activities

Contractors selected from 6 geo-political zones	Blockwork output per gang per 8hr day	Rendering output per 8hr day	Purlins output per 8hr day	Roof Covering output per 8hr day

	E nr	A nr	D	E m^2	A m^2	D	E m	A M	D	E m^2	A m^2	D
SE	150	130	-30	11	9	-2	42	40	-2	25	21	-4
SW	170	150	-30	10	7	-3	40	38	-2	23	20	-3
SS	150	120	-30	12	8	-4	41	38	-3	24	21	-3
NE	120	110	-10	10	7	-3	40	37	-3	22	20	-2
NC	130	110	-30	8	6	-2	38	36	-2	22	19	-3
NW	110	100	-30	9	7	-2	39	36	-3	20	18	-2
National Average	E	A	% D	E	A	%D	E	A	%D	E	A	% D
	138	**120**	**-0.13**	**10**	7	**-0.30**	**40**	**38**	**-0.05**	**23**	**20**	**-0.13**

Source: Field survey, 2011

Results of the study (table 1) showed that the average expected and actual national outputs per gang are 138 and 120 for blockwork; 10 and 7 for rendering, 40 and 38 for purlins, 23 and 20 for roof covering. The divergences are -0.13, -0.30, -0.05, and - 0.13 respectively.

TABLE 2: Extent of workmen agreement on factors that affect their morale at the workplace.

		Agree			Neutral		Disagree		
S/No	**Description.**	**SA**	**A**	**%**	**UND**	**%**	**SD**	**D**	**%**
	Motivators								
1.	Job Security	12	15	75	1	3	6	2	22
2.	Good Relationship with others	8	18	72	2	6	4	4	22
3.	Recognition on the job	14	14	78	1	3	5	2	19
4.	Challenging tasks	16	10	72	3	8	4	3	20
5	Fringe benefits	11	19	83	2	6	2	2	11
	Demotivators								
6	Incompetence of crew members	10	17	75	3	8	3	3	17
7	Productivity urged but no one cares	13	19	89	1	3	1	2	8
8	Bad treatment by supervisors	11	17	78	2	6	4	2	16
9	Redoing work	8	23	86	3	8	1	1	6

10	Non-recognition of effort	12	18	83	1	3	2	3	14
	Average Response			791/946 X100 = **84%**					155/946 X100 **=16%**

Source: Field survey, 2011

From table 2 above, discarding data from the undecided (neutral) respondents, 84% of the respondents agree that while 16% disagree that the above listed motivators and demotivators constitute factors that affect workmen morale. On the basis of the empirical findings, the identified morale factors were further studied to determine the extent to which they relate to workmen productivity.

TABLE 3: Extent to which identified morale factors relate to workmen productivity

		Agree			Neutral		Disagree		
S/No	**Description.**	**SA**	**A**	**%**	**UND**	**%**	**SD**	**D**	**%**
	Motivators								
1.	Job Security	12	15	75	1	3	6	2	22
2.	Good Relationship with others	8	18	72	2	6	4	4	22
3.	Recognition on the job	15	14	81	4	11	2	1	8
4.	Challenging tasks	13	16	81	3	8	2	2	11
5	Fringe benefits	17	11	78	2	5	2	4	17
	Demotivators								
6	Incompetence of crew members	9	15	67	3	8	3	6	25
7	Productivity urged but no one cares	11	18	81	3	8	2	2	11
8	Bad treatment by supervisors	14	16	83	2	6	3	1	11
9	Redoing work	8	14	61	4	11	4	6	28
10	Non-recognition of effort	10	12	61	3	8	3	8	31
	Average Response			740/926 X 100 = **73%**					186/926 X 100 = **27%**

Source: Field survey, 2011

From table.3 above, discarding data from the undecided (neutral) respondents, 73% of the respondents agree while 27% disagree that the above identified morale factors relate to workmen productivity.

4.1 TEST OF HYPOTHESIS

H_o: There is no significant relationship between construction productivity and construction workforce morale.

H_a: There is a significant relationship between construction productivity and construction workforce morale.

A test of significance between proportions was carried out on the proportion of respondents that agreed P_1, and the proportion of those that disagreed , P_2 and discarding the proportion of those who were neutral (undecided), P_3.

h_0: $P_1 = P_2$

h_a $P_1 > P_2$

Test statistic $= t_c = \frac{P_1 - P_2}{SE}$ and $SE = \sqrt{\frac{P_1 q_1}{n_1} + \frac{P_2 q_2}{n_2}}$

t computed= $t_c = 12.63$

Since the result yielded $t_c = 12.63 > t_t = 1.645$ at $\alpha/2$, $\alpha = 0.05$, we reject the null hypothesis (H_o),which says that there is no significant relationship between construction productivity and construction workforce morale, and accept the alternate hypothesis (H_a) and conclude that there is a significant relationship between construction productivity and construction workforce morale.

5.0 CONCLUSION

From the result of the study, and the discussion of findings, it is concluded that productivity targets were not achieved by the gangs of the two trades being studied, i.e masonry and carpentry in the nations' six geo-political zones. The study showed that certain motivators like job security, good relationship with others, recognition on the job, challenging tasks, fringe benefits; and certain demotivators like incompetence of crew members, productivity urged but no one cares, bad treatment by supervisors, redoing work, and non-recognition of effort affect workers morale. The study also provided empirical evidence that significant relationship exists between the identified morale factors and workmen productivity.

6.0 RECOMMENDATIONS:

Adoption of a procurement strategy that ensures sustained activity and job security by management of construction organisations.

Promotion of a team working culture and good interpersonal relationship among workforce.

Good treatment of operatives by supervisors, recognition of effort through commendations, awards, and promotions.

Enrichment of work activities with variety and challenging tasks.

Granting of fringe benefits, development and implementation of incentive schemes.

REFERENCES

Adeniji, E.O. (1984). Housing and the Construction industry in Nigeria. *Proceedings of the Annual Conference of the Nigerian Economic Society*, University of Ibadan, Ibadan.

Adindu, C.C, Omar, J.F and Attahiru, M.S. (1993). *Productivity Assessment of Construction Labourforce in Nigeria.* Paper presented in the Dept of Building, Faculty of Environmental Sciences, University of Jos, Jos.

Duncan, C. (2010). Quantity *Surveyors Pocket Book*, Oxford: Elsevier Ltd.

Elems, O. (1985). *Motivation As a Tool for Improving Job Performance Among Casual Workers in Building Project Sites in Nigeria.* Unpublished

M.Sc. Thesis in the Department of Building Technology, University of Lagos.

Eze, L.N. (1981), *Motivation and Work Productivity Among Nigerian Workers*. Paper presented at the first national on organizational behaviour and management, Ibadan.

Greig, I.D.(1984), "Basic motivation and decision styles in organization management", *International Journal of Management Science, Vol.12.*

Loosemore, M; Dainty, A; and Lingard, H (2003), *Human Resource Management in Construction Projects: Strategic and Operational Approaches*. London: Spon Press.

Mc Nally, H.E.(1967), Labour Productivity in the Contruction Industry. A Journal of the Construction Division, ASCE No.2, Paper 405.

Ndekwu, E.C. (1988), A macro-economic overview of the Nigerian Construction Sector. A paper presented at the National Workshop on Construction Policy, ASCON, Badagry, Lagos.

Obadan, M.I. and Uga, E.O.(1996), National Planning and Construction in Nigeria, paper presentation at the 17th Biennial Conference of the Nigerian Institute of Quantity Surveyors, November, 1996.

Olaloku, F.A.(1987), The Quantity Surveyor: the Second-Tier Foreign Exchange Market and the Construction Industry in Nigeria, Journal of The Federation of Building and Civil Engineering Conractors.Vol. 4, No.1.

Oloko, O. (1977), Incentives and Rewards for Efforts, Management in Nigeria, Vol.13, No. 5.

Olowo-Okere, E.O.(1988), Problems of Construction Management in Nigeria, Paper at the Workshop on National Construction Policy, ASCON, Badagry, Lagos.

Okwa, A.A.(1981), Improving Productivity in the Nigerian Construction Industry-A Managerial Approach. Unpublished M.Sc.Dissertation, Ahmadu Bello University, Zaria.

Peurifoy, R.L., Schexnayder, C.J, and Shapira, A.(2006), *Construction Planning, quipment and Methods*, New York: McGraw-Hill Publishers.

Proverbs, D; Holt, G. and Omolaiye, P. (1999), "European Construction Contractors: A Productivity Appraisal of Institute Concrete Operations", *Construction Management and Economics*, 17

Schaefer, S.D. (1977), *The Motivation Process*, Cambridge Massachusetts: Winthrop Publishers Inc.