PROCEEDING 20





DEPARTMENT OF

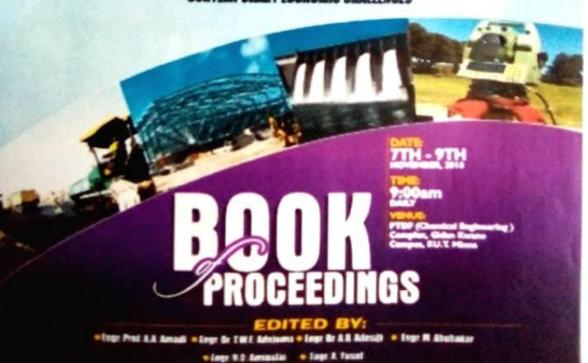
CIVIL ENGINEERING

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA



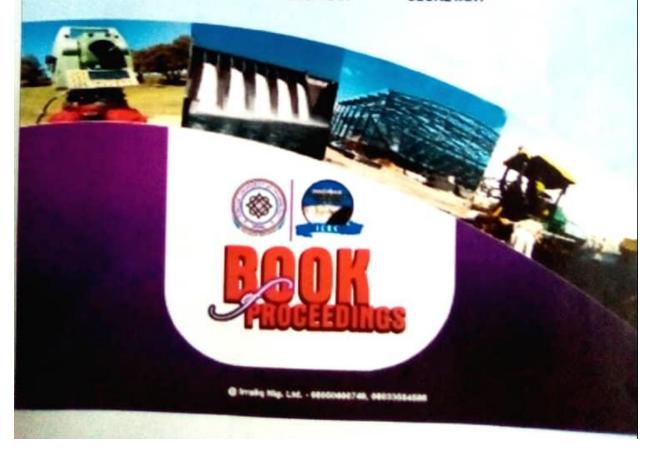
Thomas

INFRASTRUCTURE DEVELOPMENT IN THE CONTEXT OF CONTEMPORARY ECONOMIC CHALLENGES



ICEC 2018 COMMITTEE MEMBERS

- . ENGR. PROF. S. SADIKU CHAIRMAN
- . ENGR. PROF. J.L AGUWA . MEMBER
- ENGR. PROF. A.A. AMADI "
- ENGR. PROF. J.O ADIGURE "
- ENGR. DR. M. SAIDU "
- ENGR DR. T.W.E. ADEJUMO -
- ENGR DR. A.R. ADESIJI -
- ENGR DR. A.O. BUSARI -
- ENGR. H.O. AMINULAI -
- ENGR A. YUSUF
- ENGR. M. ABUBAKAR
 SECRETARY



Computer Aided Analysis of Hierarchical Truss Structures Based on the Method of Substructuring Alffsya Musa, Salawu Sadiku and Mohammed Abdullahi	399-542
Stress Analysis of Continuous Slab on Elastic Foundation Using the Finite Difference Method Peter Ukonu, Salawu Sadiku and James I. Aguwa	342-390
Computer Aided Analysis of Reinforced Concrete Waffle Slab Bridge Deck Using Method of Grillages Hawawa Adamu, Salawa Sadiku and Bala Alhaji	351-365
A Genetically Optimized Model in Determining Applications for Desired Stream Cipher Joshua Manica Edward, John Kolo Alhassan and Joseph Adebayo Ojenlyl	354-360
Prelimmary Evaluation of Pago Clay in Production of Interlocking Bricks [be, P. C; Alhaji, M. M & Amadi, A. A.	361-364
Assessment of the Hygrothermal Properties of Mortar using Quarry Dust Okafor A.; Yusuf A.; and Abdullahi A.	365-369
Statistical Modeling of Compressive Strength of Ordinary Portland Cement Concrete with Rice Hunk A Mustaphia, G. A.; Aguwa, J. I. & Bala, A.	sh 376-377
Road Pavement Settlement Determination Ekuje E. O; Kolo S. S., Ladan M; Aba J.; Elogie P.& Alhaji U.	378-381
Assessment of Motivational Strategies to Improve Productivity in Nigerian Construction Indus Mohammed I. and Shittu A.	382-387 X



F^{SS} international Civil Engineering Conference (ICEC2018) Separateur of Civil Engineering Federal Environment of Technology, Manna, Nigeria



ASSESSMENT OF MOTIVATIONAL STRATEGIES TO EMPROVE PRODUCTIVITY IN NIGERIAN CONSTRUCTION INDUSTRY

Mohammed L &Shitte A.A.2

The Federal Polyseconia Buda Niger State, Nigeria *Federal University of Technology, Minna, Nigeria *monammedian adamiam allyabor com

A BOTTE ACT

Microsphile is considered as an important too for embasionic worker's productivity. Construction sector is not an exception. It has been empirically established that motivation has positive impact on construction worker's productivity. Moreover empirical studies have shown that productivity in the sector has been decreasing globally This study interestions assess it assess microvarious incliniques employed by construction firms is achieve productively is their with place. Journalities research beings was employed using a well-structured ourstonnaire selfautomissioned across communicating firms is assess the perception and understanding of the construction professionals on for many-massive increasives employed by construction firms is actively productively in their work places. A total of one numbers and him pure normalism were distributed and one numbers and less received, which constitutes "I percent names that Response importance index EU was used for the various ranking of motivation strategies and larger were used to present termingraphic path of responseme. The tanking of motivational techniques revealed the topmost faction has influence Municipality of communities professionals are Job security. Salary paid by the company, Promotions. Transmy and development to entorics solds and artiles to improve performance. Rewards that are linked to performance and Working conditions and conductive work environment, with their reserve R., above 0.85. The made and established the effectiveness of monomiassa techniques in establishing productives of construction professional. The tagenty effective techniques are for security solary paid by the company. Promotions, Training and assessment is ensured with and apility is improve performance, printeness, because and ability to participate in section making. All these sectiniques were taken above 6.85. The study recommended that the construction industry should perhaps have their manysport strategies around these preferred mutivators.

Reprints: Assessment, Commiscion industry, Missingson, Productivity.

1 INTRODUCTION

The posteriorism mounty is a strategic reducery to the samena accessing providing infrastructure and shelter for other sciences, accounts it has place their vision difference. 20-4, forar faults, di bess (20-2) noted that construction is a new sector of the tunionia economy for posterior all around the world, is traditionally it takes at a top portion in the tunion is total employments and it is appointed to the tunion is a tunion it revenue as a whose

If the construction industry the furnition of construction professionals is in definer projects safety within constant view and in the closes: inclusionals. This carries be accorded to the closes inclusional the motivation of construction within particularly in medium-scal and large construction comparison where large volumes of work an increase a familiary of the construction is the construction and parameter of the work most formation of the construction and parameter of the work most formation in the of the society of Employee testimation is the of the society of Employee testimation in the of the society of Employee testimation is the of the society of testimation is seen of the society of testimation of testimation of the society of testimation of testimat

winter motivation and performance therefore there is the need for worker is always feet motivated in order to increase performance. I materialismy work obstronment can have an adverse effect or worker motivation that tinds to make minima effort towards work thereby towards performance. Thomas et al. 2004.

Therefore it is management of the construction industry responsibility to provide to employees with an ensumment in which they can flavor and perform at their maximum penerital in an effort to establish a dunly and productivity driver company culture. This will eliminate time overtur which is usually accompanied by cost escalation and hence the adhervement of improved productivity. According to Damorq (2007), unless are adoquate and appropriately management of companions workers are employed, the industry will companion but in satisfy the determinate of the marker for an adoptive innovative and capating service.

Thus, the arm of the study is to assess motivational techniques of concentractive professionals in assessmentation from in Africa with a view to enterioring their productives and activaciantisation in the trials area. To actively the arm of the study the following objectives

ion form intel



1ST international Civil Engineering Conference (ICEC2018) Department of Civil Engineering Federal University of Technology, Minna, Nigeria



- To identify the construction workers' motivation techniques adopted by construction firms to achieve higher productivity at the workplace.
- To assess the effectiveness of motivational techniques on construction professionals in the study area.

2.0 THE CONSTRUCTION INDUSTRY

2.1 THE CONSTRUCTION INDUSTRY

The construction industry in both developed and developing countries may be viewed as that sector of the economy which, through planning, design, construction, maintenance and repair, and operation, transforms various resources into constructed facilities. The types of public and private facilities produced range from residential and non-residential buildings to heavy construction, and these physical facilities play a critical and highly visible role in the process of development (Kheni, Gibb, & Dainty, 2008). The industry generates employment and income for about 7%, 8% and 5.5% of Europe, United States and Turkey's workforce respectively (Adjei, 2009; Kazazet al. 2008). More so, in the developed countries, the constructions of high rise buildings are undertaken by the use of available equipment and management techniques which tend to improve the quality of the output. Contrary to this, the developing countries have very little modernization and, therefore, still continue with the traditional labourintensive style of construction which is time-consuming and does not match quality requirements demanded in construction (Osuji, 2014).

Osuji (2014); Idrus&Sodangi (2007) asserted that the Nigerian construction industry produces nearly 70% of the nation's fixed capital formation yet its performance within the economy has been and continues to be very poor. This also can be attributed to the movement of employees away from long term employment relationships and long-term rewards and the efforts are focused on short-term rewards.

The Nigerian economy continues to grapple with a number of challenges that has hampered efforts at economic transformation. The economy is yet to achieve the necessary structural changes required to jump-start rapid and sustainable growth and development, aside disarticulated and narrow productive base, while the sectarian linkages in the economy are also weak (1sa et al. 2013)

2.2 MOTIVATION

The term motivation has its origins in the Latin word movere, which means movement (Steers, et al. 2004). Chukwuma&Obicfuna (2014), defines motivation as the internal or external driving force that produces the willingness to perform an act to a conclusive end. The first aspect of motivation is internal motivation because

the driving force comes from within an individual. The second aspect is external motivation, and is applied by the organization. This is because employees are motivated to identify with organization in order to satisfy their varied and variegate needs and desires. Until they have been identified and properly satisfied, they will never cease to impede smooth running of the organizations.

2.3 CHARACTERISTICS OF MOTIVATION

Adjei (2009), identified four common characteristics which underlie the definition of motivation namely:

- a. Motivation is typified as an individual phenomenon: - Every person is unique and all the major theories of motivation allow for this uniqueness to be demonstrated in one way or the other.
- Motivation is usually intentional: Motivation is assumed to be under the control of the worker, and behaviours that are influenced by motivation, such as effort expended, are seen as choices of action.
- Motivation is multifaceted: The two factors of greatest importance are:
 - i. What get people activated?
 - The force of an individual to engage in desired behaviour
- d. The purpose of motivational theories is to predict behaviour: - Motivation is not the behaviour itself, and it is not performance. Motivation concerns action, and the internal and external forces which influence a person's choice of action.

2.4 THE CONCEPT OF MOTIVATION

Motivation refers to the forces either within or external to a person that arouse enthusiasm and persistence to pursue a certain course of action (Darf, 2006). Employee motivation affects productivity, and part of a manager's job is to channel motivation toward the accomplishment of organizational goals. The study of motivation helps managers understand what prompt people to initiate action, what influences their choice of action, and why they persist in that action over time.

2.5 TYPES OF MOTIVATION

Motivation can be categorized in two ways namely: Intrinsic and Extrinsic motivation (Joyce, 2012).

Intrinsic motivation

Intrinsic motivation is the satisfaction a person receives in the process of performing a particular action. This is related to psychological rewards such as the opportunity to use one's ability a sense of challenges and achievement receiving appreciation, positive recognition, and being treated in a carring and considerate manner. Psychological rewards are those that can usually be determined by the actions and behavior of the individual managers (Jovee 2012). Intrinsic motivators are concerned with the quality of



1³⁷ international Civil Engineering Conference (ICEC2008) Department of Civil Engineering Federal Coincraity of Technology, Miena, Vigeria



effect because they are inherent in individuals and not imposed from outside (Joyce, 2012).

Extrinsic motivation

It is related to tangible rewards such as salary and fringe benefits, security, promotion, contract of service, the work environment and conditions of service. These are what need to be done to or for people to motivate them. They are often determined at the organizational level and may be largely outside the control of the individual managers. Extrassic motivators can have an immediate and powerful effect but will not necessary and long (Joyce, 2112). People that are extrinsically monvated do not actually get motivated from the work stield. They expect to receive some rewards after having performed a certain task or else they will not feel pleased (Gagne &Deci, 2005

The sample frame (140) contains details of local communion registered with Federal Ministry of works and Hosing However, based on Krejon and Morgan (1970), a sample (N) of 146 would require a population (a) of 105 for the study.

As such a total of 10d questionnaires were distributed to respondents and 95 copies were duly filled and returned representing 90% response rate. This however is better response compared to Hilmier at (2010) who studied the Motivational strategies to improve productivity is the construction industry in Ghana had only 52% response rate. Structured questionnaire was the instrument employed for data collection. The questionnaire contains questions on the respondents' and organizations profiles, factors that affect ponstruction workers monvenion at the workplace measured on a 5-point Likert scale in descending order. Where I represent Strongly DIS-Agree, I is Agree, I is 44 SURVEY FINDINGS Neutral 4 is Agree and 5 is Strongly disagree; conversely, effect of the identified motivational factors. have in productivity at site were measured on a 4-point Liken scale thus very high effect 111. High effect(2).

work life, are likely to have a deeper and longer-term. Now (3), and to offect (4). The statistical method which was used in analyzing the data strained from the respondents was Relative Importance Index.

TABLE : INTERPRETATION OF THE RIL VALUES AS FOLLOWS:

Level of	Rating	
agreement	- 3	
Strongly agree	6.85 &	
Agree	above	
Neutral	4.76 -4.34	
Dissigner	0.67-0.75	
Strongly disagree	0.45-0.66	
	0.44 below	

Kasima (2016)

3.0DEMOGRAPHIC SURVEY

The respondents profile revealed that 31% of them are General Managers, 22% are Quantity Surveyors by profession, 12% are Architecture while 12% and 3% are Civil engineers and other category is indicated in the questionnaire. On their level of education are \$50 are holders of ONDINCE, 31% obtained BSC B.TECH. while 38.40% tod Master i degree and 23.08% tod professional peruficases of their professional modies, Inaddition, the level of their work experiences ranges from (5-14 years) Ph. (16-15 years) 34% (3-20 years) 26% and (Sidadove: 19% investigation and revened than all the respondents sampled that experienced factors that affect construction workers' motivation at the workplace. This inferred that the respondents are qualified to provide information required for the study.

This unit of the study discusses the Factors than Influence Motivation of Construction Professionals.

TABLE 2: FACTORS THAT INFLUENCE MOTIVATION OF CONSTRUCTION PROFESSIONALS

SN	Motivational skills	RII	RANK
1	leb secure. (having confidence about future within the organisation)	0.45	•
2	Selary paid by the company	0.40	- ,
3	Advancement and growth apparameters within the organization	6.41	- 1
4	Transity and development to enhance skills and ability to improve performance	0.55	
5	Reversi the art must be performance	1.50	
6	Working undiffered and conductive work provincement	0.85	
+	IMPROVED THE THE PROPERTY AND INTERPRETATION	2.61	
	Athleh to participate it decision making	0.74	8
9	Leadening is trustworthy and respectful leader:	4.79	9



1³⁰ international Civil Engineering Conference (M. M. Mrsh) Department of Civil Engineering Federal University of Lachnology, Missen, Siggeria



10	Recognition and appreciation of employees performence	1 64	
11	Timely feedback on employees performance and their level of progress	1 6 24	19
12	Promotion	1 22	- 15
13	Accommodation	6.71	17.
14	Vacation leave	1 621	17
15	Telephone services - for effective communication between projectelessense	4.60	1.0
16	Conducive working environment. Good and safe work environment	0.61	-12
17	Award and recognition - for an employees' contribution to the organization	0.65	14

Sources: Researcher's data 2018

From Table 2, it shows that the most influencing factor on the motivation of construction professionals is 'Job security' with RH of 0.95. It is a very significant factor because it ranked 0.76 and above on the Relative

Importance Index (RII) 'balary paid by the company' 'Advancement and growth opportunities. 'Training and development' and 'Rewards for performance' ranked second, third, fourth, and fifth respectively with RII between 0.86 and 0.92. This shows that they are all very significant factors.

TABLE 3: EFFECTIVENESS OF MOTIVATIONAL TECHNIQUES OF CONSTRUCTION PROFESSIONAL ON PRODUCTIVITY

S/N	Effects of Motivational skills	RII	RANK
1	Salary paid by the company	0.91	01
2	Rewards that are list of a sec	0.51	VI
3	Rewards that are linked to performance	0.89	02
4	Leadership (a trustworthy and respectful leader)	88.0	03
	Training and development to enhance skills and ability to improve performance	0.85	04
5	Telephone services - for effective communication between project elements	0.85	
6	Timely feedback on employees performance and their level of progress		04
7	Vacation leave	0.84	06
8	Job security (having confidence about future within the organization)	0.83	97
9	Conducive working environment - Good and safe work environment	0.83	07
10	Recognition and appreciation of employees' performance	0.82	09
11	Promotion Promotion	0.81	10
12	Working conditions and conductive work environment	0.80	- 11
13	Accommodation	0.79	12
14	Ability to participate in decision making	0.76	13
15	Advancement and an decision making	0.75	14
16	Advancement and growth opportunities within the organization	0.72	15
17	Interpersonal relationship with co-employees	0.71	16
17.	Award and recognition - for an employees' contribution to the organisation	0.70	17

Source; Researchers' data 2018

Interpretation of the RII values as follows: Highly effective 0.85 & above Effective 0.76-0.84. Averagely effective 0.67-0.75. Ineffective 0.45-0.66. Highly ineffective 0.44 and below

The result from table 3, shows that the most effective motivational techniques on the construction professionals is salary paid by the company with RII of It is highly effective 0.85 and ranked 1°.



1⁵¹ international Civil Engineering Conference (ICEC2018) Department of Civil Engineering Federal University of Technology, Minna, Nigeria



"Advancement and growth opportunities", "Training and development" and Rewards for performance ranked second, third fourth, and fifth respectively with RII between 0.86 and 0.92. This shows that they are all very significant

SUMMARY OF FINDINGS

From table 2 of the research it can be inferred that all the factors indicated in the table influence Motivation of construction professionals as all the variables scored above average, similarly all the factors indicated in Table 2 were tested and proofed to be a consequential effects of motivation in the building industry. Findings from study were in agreement with (Emmanuel 2009), that motivational techniques has a significance influence on productivity.

5.0 CONCLUSIONS AND RECOMMENDATIONS 5.1 CONCLUSIONS

The present study was conducted with a view to assess motivational techniques of construction professionals in construction companies in Abuja with a view to improving their productivity and self-actualization in the study area.

This study anempts to answer this research question: What are the motivational techniques adopted by contracting firms in Nigeria and what are the effectiveness motivational techniques adopted by contracting firms in Nigeria. The populations of study were building contractors registered with Federal ministry of works and housing. A structured questionnaire was employed as instrument for data collection, Studies of similar nature were reviewed to elicit information on related to the subject maner.

In conclusion, the results of the study revealed that the motivational techniques offered by contracting firms to achieve higher productivity in construction sites were: Job security (having confidence about future within the organization, Salary paid by the company, Advancement and growth opportunities within the organization. Training and development to enhance akilis and ability to improve performance. Rewards that are tinken to performance. Working conditions and conducive work environment. Interpersonal relationship with co-employees. Ability to participate in decision making Leadership (a trustworthy and respectful leader, Recognition and appreciation of employees" performance Similarly, the study revealed certain motivational techniques that affect the performance of construction professionals. According to the findings, gnoc remuneration (salary) is the most effective technique. The study considered all other motivational incliniques in effective however their degree of

RECOMMENDATIONS

effectiveness varied

The following recommendations were made based on the findings and conclusions drawn from the study:

- I. In order to improve the level of motivation of construction professionals in the industry, attention should be given to their job security needs as well as their esteem and selfactualization needs. This will go a long way in improving their performance and hence, give construction companies competitive edge in the international arena.
- II. In adopting the most effective motivational techniques on the performance of construction professionals, critical consideration needs to be given to Good remuneration (salary), professional training courses, job design, bonus, and promotion opportunities.

REFERENCES

Daft, R.L. (2006). New Era of Management. Vanderbilt University, U.S:(2nd Ed.)

Enshassi, A., Mohamed, S., Mustapha, Z. A., & Mayer, P. E., (2007). Factors Affecting Labour Productivity in Building Projects in The GazaStrip. Journal of Civil Engineering and Management, 8(4).

Offei-Nyako, K., Osei-Tutu, E., Fugar, F.D.K., &Adinyira, E. (2014). Skilled Artisanal Availability in the Ghanaian Construction Industry. Covenant Journal of Research in the Built Environment (CJRBE), 1(1) (Maiden Edition).

Adjei, E.A. (2009). Motivational Strategies to Improve Productivity in the Construction Industry in Ghana. M.Sc. Thesis, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

Benviolent, C. & Tirivavi, M. (2014). Factors Affecting Labour Productivity on Building Projects in Zimbabwe. International Journal of Architecture, Engineering and Construction, 3 (1), 57-65.

Chukwuma, E.M., & Obiefuna. O. (2014). Effect of Motivation on Employee Productivity: A Study of Manufacturing Companies in Nnewi. International Journal of Managerial Studies and Research (IJMSR) 2, 137 – 138.

Dantong, J.S. (2007). Training of Construction craftsmen in the Nigerian Construction Industry. Unpublished M.Sc. Thesis submitted to Department of Architecture, University of Jos. Nigeria.

Enshassi, A., Mohamed, S., Mustapha, Z. A., & Mayer.
P. E., (2007). Factors Affecting Labour.
Productivity in Building Projects in The GuzaStrip. Journal of Civil Engineering and Management, 8(4).



1ST international Civil Engineering Conference (ICEC2018) Department of Civil Engineering Federal University of Technology, Minna, Nigeria



Adjei, E.A. (2009) Motivational Strategies to Improve Productivity in the Construction Industry in Ghana. M.Sc. Thesis, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

Daft, R.L. (2006). New Era of Management. Vanderbilt University, U.S:(2nd Ed.)

Dantong, J.S. (2007). Training of Construction craftsmen in the Nigerian Construction Industry. Unpublished M.Sc. Thesis submitted to Department of Architecture, University of Jos, Nigeria.

Gagne, M. &Deci, E. L. (2005).Self-Determination Theory and Work Motivation_Journal of Organisational

Behavior, 26, 331-62.

Idrus, A. B., & Sodangi, M. (2007) Framework for Evaluating Quality Performance of Contractors in Nigeria. Internatinal Journal of Civil and Environmental Engineering IJCEE-IJENS 10 (1), 34-39

Isa, R.B., Jimoh, R. A., &Achuenu, E. (2013).An Overview of the Contribution of Construction Sector to Sustainable Development in Nigeria. Net Journal of Business Management, 1(1), 1-6.

Joyce, C. E. (2012). Impact of Motivation on the Productivity of Employees at GT Bank Ghana. M.Sc. Thesis Presented to theInstitute of Distance Learning, Kwame Nkrumah University of Science and Technology, Ghana.

Kheni, N., Gibb, A. G. F., & Dainty, A. R. J. (2008). Health and Safety Management in Developing Countries: A Study of Construction SMEs in Ghana. Construction Management and Economics, 26(11), 1159.

Offei-Nyako, K., Osei-Tutu, E., Fugar, F.D.K., &Adinyira, E. (2014). Skilled Artisanal Availability in the Ghanaian Construction Industry. Covenant Journal of Research in the Built Environment (CJRBE), 1(1) (Maiden Edition).

Osuji, E. O. (2014) Evaluating the Motivational Factors of Employee Consultants in Nigerian Construction Industry. Unpublished M.Sc. Thesis, Department of Building, Ahmadu Bello University, Zaria, Nigeria.

Kazaz, A., Manisali, E., &Ulubeyli, S. (2008). Effect of Basic Motivational Factors on Construction Workforce Productivity in Turkey. Journal of Civil Engineering and Management, 14 (2), 95-106.

Shehu. A M (2017). Assessment of Motivation of Non-Construction Professionals in Construction Companies in Abuja, Nigeria. Unpublished thesis submitted to Department of Building, Ahmadu Bello University.