



## Assessment of Management-Related Factors Affecting Construction Labour Productivity in Cross River State of Nigeria

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**Abstract:** Productivity has always been noted as one of the most important factors affecting the success and overall performance of every organisation and the role of management in this matter cannot be overemphasised. This study assesses and compares the relative effects of management-related factors on construction labour productivity in Cross River State of Nigeria from the perspectives of building craftsmen and project supervisors/engineers. A survey research design approach was adopted which involved a stratified random sample of 115 building craftsmen and 60 project supervisors/engineers. Data were collected through structured questionnaires and analysed using Mean Item Score and Spearman Rank Correlation test. The result shows that there is significant correlation between building craftsmen' and project supervisors'/engineers' perceptions of the relative effects of management-related factors on construction labour productivity ( $p = 0.001 > 0.05$ ). In addition, the selected project team members ranked 'material management', 'quality of site management', 'lack of financial motivation system', 'supervision', 'crew size and efficiency' and 'firm reputation' as the first five significant management-related factors affecting construction labour productivity respectively. The last two factors tie rank in the fifth position. It is concluded that there is need for improved management practices in underdeveloped and developing countries of the world to enhance productivity on construction sites. The study therefore, recommends that construction managers should formulate policies incorporating significant management-related factors affecting construction labour productivity as part of productivity improvement strategies on construction sites.

**Keywords:** Construction, craftsmen, effects, factors, labour, management, productivity.

### Introduction

In Nigeria, construction investment accounts for over 60% of the Gross Fixed Capital Formation (GFCF) i.e. the total national investment (Dlakwa and Culpin, 2010). The industry is also seen as the barometer for the performance of

the economy in most developing countries (Chitkara, 2006). Adedeji (2008) observes that building industry being a subset of the construction industry is one of the most important sectors of the Nigerian economy.

Productivity is considered as one of the most important factors affecting the success and overall performance of every organization, whether large or small, in today's competitive market (Sweis, Sweis, Abu Hammad & Abu Rumman, 2009). According to Walker (1995), construction productivity is traditionally identified as one of the three main critical success factors together with cost and quality for a construction project. However, it has been observed that construction productivity is a cause of great concern in both the construction industry and academia (Park, Thomas & Tucker, 2005). Many researchers have reported the decline in construction productivity (Veiseth, Rostad & Andersen, 2003; Hewage & Ruwanpura, 2006). Lawal (2008) reports that construction workers in the Nigerian public service have almost zero productivity. Therefore, poor productivity of craftsmen have been identified as one of the most daunting problems that construction industries especially those in developing countries face (Kaming, Olomolaiye, Holt & Harris, 1997).

In view of this, there is a growing and continuous interest in productivity studies all over the world because of its importance in the management and control of project cost. Motwani, Kumar & Novakoski (1995) opine that identifying and evaluating the factors that influence productivity are critical issues facing

construction managers. Hendrickson & Au (2003) state that 'good project management in construction must vigorously pursue the efficient utilization of labour, material and equipment and that improvement of labour productivity should be a major and continuous concern of those who are responsible for cost control of constructed facilities'.

Not many studies known to the authors have considered the relative effects of management-related factors on construction labour productivity by comparing the views from building craftsmen and site supervisors who are important project team members directly involved with construction labour productivity matters. Comparing building craftsmen and site supervisors/engineers' perception of the relative effects of factors affecting construction labour productivity will either reveal that there is agreement or not in the way the two groups view the degree to which productivity factors affect construction labour productivity. Their agreement will help to emphasize factors that should be focused upon to improve productivity.

On the other hand, since building craftsmen are the group directly involved with the issue of productivity, their disagreement may help to identify factors that are probably neglected by the project supervisors/engineers who are their supervisors. Acknowledging and

addressing such factors by the project supervisors/engineers will help in providing a holistic approach to tackling construction labour productivity problems on construction sites which will lead to improved labour productivity. It is in response to this gap in literature that this study assesses and compares the relative effects of management-related factors on construction labour productivity as perceived by building craftsmen and project supervisors/engineers in Cross River state of Nigeria. Management-related factors in this study is similar to the internal factor group used in Olomolaiye, Jayawardane & Harris (1998), which refer to all factors affecting productivity, that are directly within the control of management. Thirty one management-related factors affecting construction labour productivity were identified from previous studies and focused group discussions with construction managers and building craftsmen and assessed for their influence on construction labour productivity.

Cross River State is a coastal state bordering Cameroon to the east with a total area of 20, 156 km<sup>2</sup>. According to the 2006 census the state has a population of 2, 892, 988 people (FRN, 2009). Its capital is at Calabar, and it is named for the Cross River, which passes through the state. Other major towns in the state are Akamkpa, Biase, Calabar South, Ikom, Obubra, Odukpani, Ogoja, Ugep, Obudu, Obanliku and

Akpaabuyo. The state was created in May 27, 1967 from the former Eastern Region of Nigeria and was changed to Cross River State in the 1976 state creation exercise from South Eastern State (Wikipedia, 2014). It's vegetation like most of the other states is mainly rain forest and mangrove swamps, especially in the coastal areas. The fact that the state is one of the foremost states to be created in Nigeria makes investigation into the effects of management practices on construction labour productivity for such a long standing geo-political division a subject of research interest.

The objectives of this study are to: evaluate the relative effects of management-related factors from the perspective of building craftsmen and project supervisors/engineers and to compare their perceptions of the relative effects of management-related factors on construction labour productivity for agreement or disagreement. Considering that project supervisors/engineers represent management's views on factors affecting construction labour productivity their perceptions may be the same or different from that of the building craftsmen. To achieve the objectives of the study a hypothesis was postulated as follows:

There is no correlation between building craftsmen' and project supervisors'/engineers' perceptions of the relative effects of

management-related factors on construction labour productivity.

### **Review of Related Literature**

Enshassi, Mohamed, Mustafa, & Mayer (2007) observe that despite the intensive investigations made into the factors affecting labour productivity, researchers have not agreed on a universal set of factors with significant influence on productivity; or any agreement reached on the classification of these factors. The authors however, group factors affecting construction labour productivity under ten headings, namely: manpower, leadership, motivation, time, materials/tools, supervision, project, safety, quality and external. Alinaitwe, Mwakali & Hansson (2007) argue that even though studies have been carried out on factors influencing productivity in developed countries there is still a lot to be done in developing countries because the critical factors could differ from place to place. In addition, the study observed that previous studies examined the construction industry as a whole while the majority of the workers are employed on building sites because most civil engineering projects are mechanised. Based on these arguments, the study identified 36 factors affecting the productivity of craftsmen from previous studies that could be considered pertinent to the Uganda's case. The evaluation of these factors showed that incompetent supervisors, lack of

skills of the workers, rework, lack of tools/equipment and poor construction method were considered to rank among the first five factors affecting construction labour productivity. Incompetent supervisors and lack of tools/equipment ranking among the first five factors affecting construction labour productivity agrees with the studies of Ayandele (1996).

Kazaz, Manisali & Serdar (2008) consider productivity factors under four groups namely; organisational factors, economic factors, physical factors and socio-psychological factors based on the theory of motivation. Durdyev & Mbachu (2011) consider key constraints and improvement measures for on-site labour productivity using 56 sub-factors. The factors were identified under eight broad categories of internal and external constraints namely: project management/project team characteristics, project finance, workforce, management-related factors, unforeseen events, technology/process, statutory compliance and other external factors. Odesola (2012) identified 75 factors affecting construction labour productivity from literature and focus group discussions with masonry artisans and project supervisors/engineers. Likewise, Odesola, Otali & Ikediashi (2013) investigated the effects of project-related factors on construction

labour productivity in Bayelsa state of Nigeria.

The word management though has many definitions is simply considered as the process of getting things done through the efforts of other people to achieve the goal and objectives of an organisation. Most often than naught, management practices of getting things done through other people have been associated with productivity. For medium sized manufacturing firms in some selected developed countries, Bloom, Dorgan, Dowdy & Van Reenen (2007) establish that there is a strong relationship between management practice and firm productivity. However, Hanna (2010) observes that in the last 50 years, construction labour productivity has consistently lagged behind productivity in the business sector. This was attributed to lack of proper tools and information, poor material handling, inadequate management and other related factors. He concludes that managers in the construction industry are often very knowledgeable about the technical aspects of their trade, but lack training in management skills.

Site management is subject to many disruptions related to workforce management practices and these disruptions result in significant economic loss to the contractor (Thomas & Horman, 2006). According to Thomas & Horman (2006), workforce management deficiencies involved insufficient work to perform, performing

cleanup or incidental work in a sequential manner, overstaffing, and ineffective use of work teams. The authors further noted that these deficiencies have been shown to impact labour productivity negatively.

According to Fombrun (1996), reputation is the perceptual representation of a firm's past actions and future prospects that describes the firm overall appeal to all of its constituents when compared to other leading rivals. Reputation is valuable because more opportunities are opened up to firms and it makes operations more effective and efficient (Dowling, 2001). However, reputation is not possessed by all firms as reputation is gained based on comparisons with competing firms, thus making it rare (Carter & Ruefli, 2006). Due to the argument that reputation is valuable, rare, inimitable, non-substitutable and dependent on management functions, previous studies have examined the relationship between reputation and performance. Some of these studies found evidence that support the contribution of reputation towards firms' performance such as profit (Lopez, 2006), organizational growth (Carmeli & Tishler, 2005) and return on assets (Deephouse, 2000). In the same vein, the ability of managers to motivate workers for higher productivity through various means which is seen as a management function has been examined by previous studies.

While some studies have reported that financial motivation have no significant effects on workers' productivity (Olomolaiye & Ogunlana, 1988; Kaming et al., 1998; Onukwube, Iyagba & Fajana, 2010). Enshassi et al. (2007) discover that it was the second most important motivational factor influencing workers' productivity.

The project team often comprises the design team and the building team (Bender & Darlene 2002). Depending on the size of the project, the project team usually consists of architects, engineers and other consultants that produced the construction documents; the owner who can be a public or private entity that specifies the project requirements and makes available funding for design and construction; and the main contractor and subcontractors who are responsible for the physical construction of the project. Construction labour productivity is mostly affected by the management of the labour directly involved with on-site activities. In view of this, Maloney (1983) remark that craft workers as the major player executing construction processes and activities, have a significant influence on construction labour productivity. In the same vein, Dai, Goodrum, Maloney & Srinivasan (2009) consider craft workers to be in the ideal position to know where and how much of site's productivity is lost or could be gained. Since labour productivity involved the

management of labour, project supervisors/engineers often regarded as middle level managers are responsible for the coordination of the instructions from upper level managers for implementation by the craftsmen. These instructions equally affect construction labour productivity. Therefore, project supervisors/engineers are considered to be an important member of the project team who relates and implements management's issues and decisions that affect construction labour productivity. Hence, United States Agency for International Development (USAID) (2005) posit that project supervisor/engineer supposed to be a jack of all trades as the success or failure of a project depends largely on their knowledge and experiences.

### **Research Methods**

Exploratory survey research design approach involving the use of a structured questionnaire and focus group discussion was employed in this study. The population for the study is categorised into three namely: public building projects completed between 2007 and 2013 and executed by small and medium sized contractors, construction project supervisors/engineers and building craftsmen in the study area. Reliable data from which the theoretical population frame can be obtained was not available therefore; a pilot study was conducted to ascertain the projects completed between 2007 and 2013

and the contractors who executed the projects. A second pilot study was conducted to identify the number of building craftsmen and project supervisors/engineers under the employment of the contractors. From the pilot studies conducted, 55 building projects executed by 14 contractors, 115 building craftsmen and 60 project supervisors/engineers were identified. These were adopted as the study population frame.

The sample size for the study population was determined using Taro Yamane formula for finite population which states:  $n = N/(1+N(e)^2)$  (Udofia, 2011).

Where  $n$  = Sample size;  $N$  = Finite Population;  $e$  = Level of significance (0.05) and  $1$  = Unity. Sample sizes of 52 site engineers/supervisors and 89 building craftsmen were obtained which were randomly sampled from the study population size of site engineers/supervisors and building craftsmen of the identified contractors.

Structured questionnaires were used to collect data on the effects of 31 identified management-related factors from two selected project team members who constitute respondents for the study. The effect of each factor on construction labour productivity was measured on a five point Likert-scale namely: nil, low, moderate, high and very high. Weights were assigned to the scale as follows: nil=1, low=2, moderate=3, high=4 and very

high=5. Out of 141 questionnaire administered on the sampled study population through stratified random sampling technique, 127 correctly completed questionnaire comprising of 75 building craftsmen and 52 project supervisors/engineers were used for the statistical analysis. This sampling technique was adopted to ensure an unbiased representation of the two distinct categories of respondents for the study.

Statistical Package for Social Sciences (SPSS) version 18 was used to analyse the data collected. The relative effects of the management-related factors on construction labour productivity and test of correlation or agreement between building craftsmen and project supervisors'/engineers' perceptions of the relative effects of management-related factors on construction labour productivity were analysed using Mean Score (MS), and Spearman Rank Correlation respectively. Spearman Rank Correlation being the non-parametric alternative to the Product Moment Correlation test was selected as the statistical tool for data analysis because the data were collected on an ordinal scale. Therefore, non-parametric statistic was considered most suitable for the statistical analysis of such data (Udofia, 2011). MS was obtained by dividing the total score by the number of respondents for each factor. A baseline of  $MS = 2.5$  was used to determine the significance

of the effect of the factors. Factors having  $MS \geq 2.5$  were considered as having significant effect while factors with  $MS < 2.5$  as having insignificant effect. This is consistent with the approach adopted in related previous studies (Adamu, Dzasu, Haruna & Balla, 2011; Durdyev & Mbachu, 2011).

Cronbach's Alpha which is acknowledged as one of the most frequently used estimate of internal consistency (DeVellis, 2003; Trochim, 2006), was used to assess the reliability of the scale in the questionnaire. According to Meepol & Ogunlana (2006), the data is acceptable if the Cronbach  $\alpha$

reaches 0.6. However, according to DeVellis (2003) ideally, the Cronbach alpha coefficient of a scale should be above 0.7. Although the latter assertion of 0.7 is not in agreement with 0.6 for the data to be adjudged acceptable this study, however, adopts the view that the internal consistency of the scale is acceptable when the Cronbach's Alpha is up to 0.7. Table 1 shows excerpts from SPSS output of Cronbach's Alpha of the scale administered to both building craftsmen and site supervisors/engineers which indicate that the reliability of the scale is acceptable being above 0.7.

Table 1: Cronbach's Alpha of the scale administered to both building craftsmen and site supervisors/engineers

Number of Items	Cronbach's Alpha of the Scale Administered to Building Craftsmen	Cronbach's Alpha of the Scale Administered to Site Supervisors/Engineers
31	0.823	0.867

**Results**

Data obtained on a five point Likert scale from the structured questionnaire were collated and analysed using appropriate statistical tools as described in the methodology. The results of data analysis carried out to achieve the objectives of the study are presented below.

**Building Craftsmen and Project Supervisors'/Engineers' Perceptions of the Relative Effects of Management-Related**

**Factors on Construction Labour Productivity**

The perceptions of building craftsmen and project engineers/supervisors of the relative effects of management-related factors on construction labour productivity are presented in Table 2. The result indicates that building craftsmen and site supervisors/engineers consider 22 management-related factors having  $MS \geq 2.5$  to have significant effects and the remaining nine as having insignificant effect on construction



labour productivity. The ranks of the effects of the factors on construction labour productivity as

perceived by building craftsmen and site supervisors/engineers are as presented in Table 2.

**Table 2: Building craftsmen’ and project supervisors’/engineers’ perceptions of the relative effects of management-related factors on construction labour productivity**

Management-related Factors Affecting Construction Labour Productivity	Building Craftsmen’ Perceptions			Project Supervisors’/Engineers’ Perceptions		
	Sum	MS	Rank	Sum	MS	Rank
Material management	287	3.83	3	214	4.12	1
Quality of site management	290	3.87	2	206	3.96	2
Supervision	270	3.60	9	204	3.92	3
Crew size and efficiency	275	3.67	7	183	3.52	4
Proper management and administrative support	213	2.84	18	182	3.50	5
Occupational education and training	240	3.20	12	175	3.37	6
Firm reputation	284	3.79	6	174	3.35	7
Site layout	253	3.37	10	170	3.27	8
Health and safety conditions	245	3.27	11	165	3.17	9
Lack of proper resource allocation	154	2.05	28	164	3.15	10
Workers turnover, recruitment and changing crews	224	2.99	16	162	3.12	11
Slow response to questions	233	3.11	14	160	3.08	12
Lack of tools and equipment	285	3.80	5	158	3.04	13
Lack of periodic meeting with labour	146	1.95	29	157	3.02	14
Worker participation in decision making	189	2.52	21	156	3.00	15
Out of sequence work assignments	234	3.12	13	151	2.90	16
Lack of places for eating and relaxation	217	2.89	17	148	2.85	17
Lack of financial motivation system	336	4.48	1	147	2.83	18
Payment delay	272	3.63	8	145	2.79	19
Lack of authority to discipline craft workers	173	2.31	25	138	2.65	20
Lack of labour recognition programs	232	3.09	15	138	2.65	20
Misunderstanding between labour/superintendents	159	2.12	27	137	2.63	22
Tools/equipment breakdown	206	2.75	19	137	2.63	22
Poor communication	122	1.63	31	129	2.48	24
Accident at work sites	173	2.31	25	129	2.48	24
Disregard of crafts' productivity improvement suggestion	198	2.64	20	128	2.46	26
Non provision of transport means for workers	287	3.83	3	128	2.46	26
Lack of training sessions	179	2.39	23	123	2.37	28
Lack of big picture view on behalf of the crafts	129	1.72	30	120	2.31	29
Construction disputes	177	2.36	24	120	2.31	29
Employment mode	188	2.51	22	97	1.87	31

\*N = 75 for building craftsmen, N = 52 for project supervisors/engineers

**Spearman’s Test of Correlation between Building Craftsmen and Project Supervisors/Engineers’ Perceptions of Factors Affecting Productivity**

To achieve the second objective of the study, building craftsmen’ and project supervisors’/engineers’ perceptions of the relative effects of management-related factors on construction labour productivity

were compared for agreement or disagreement. For this purpose, the research hypothesis states as follows:

H<sub>0</sub>: There is no significant correlation between building craftsmen’ and project supervisors’/engineers’ perceptions of the relative effects of management-related

factors on construction labour productivity  
 Result of the test of hypothesis is presented in Table 3 and it shows that there is significant correlation or agreement between building craftsmen’ and project supervisors’/engineers’ perceptions

of the relative effects of management-related factors on construction labour productivity. This is indicated by a p-value of 0.001 which is less than the 0.05 significance level set for the study; hence, the null hypothesis is rejected.

Table 3: Spearman test of correlation between building craftsmen’ and project supervisors’/engineers’ perceptions

Parameters Correlated	N	r	P-value	decision
Building craftsmen’ and project supervisors’/engineers’ perceptions of the relative effects of management-related factors on construction labour productivity	31	0.556	0.001	Reject

**Selected Project Team Members’ Perceptions of the Relative Effects of Management-related Factors on Construction Labour Productivity**

Having concluded that there is agreement between building craftsmen’ and project supervisors’/engineers’ perceptions of the relative effects of management-related factors on construction labour productivity, data collected from the two selected project team members were combined. The combined data were analysed to determine the perceptions of selected project team members on the relative effects of management-related factors on construction labour productivity in the study area. Table 4 shows the result. The result indicates that out

of twenty two factors having MS greater than or equal to 2.5, ‘material management’, ‘quality of site management’, ‘lack of financial motivation system’, ‘supervision’, ‘crew size and efficiency’ and ‘firm reputation’ are the first five significant management-related factors affecting construction labour productivity respectively. However, ‘crew size and efficiency’ and ‘firm reputation’ tie rank in the fifth position. On the other hand, out of nine factors having MS less than 2.5, ‘lack of big picture view on behalf of the crafts’, ‘poor communication’, and ‘employment mode’ are the last three insignificant management-related factors affecting construction labour productivity respectively.

**Table 4: Selected project team members’ perceptions of the relative effects of management-related factors on construction labour productivity**

Management-related factors Affecting Construction Labour Productivity	1	2	3	4	5	Sum	MS	Rank
Material management	0	0	24	86	17	501	3.94	1
Quality of site management	0	0	51	37	39	496	3.91	2
Lack of financial motivation system	0	26	9	56	36	483	3.80	3
Supervision	0	5	49	48	25	474	3.73	4
Crew size and efficiency	0	0	50	77	0	458	3.61	5
Firm reputation	0	9	68	14	36	458	3.61	5
Lack of tools and equipment	8	8	47	42	22	443	3.49	7
Site layout	0	9	67	51	0	423	3.33	8
Payment delay	5	38	29	26	29	417	3.28	9
Occupational education and training	0	41	32	33	21	415	3.27	10
Non provision of transport means for workers	13	29	18	45	22	415	3.27	10
Health and safety conditions	0	35	40	40	12	410	3.23	12
Proper management and administrative support	0	24	65	38	0	395	3.11	13
Slow response to questions	12	21	45	41	8	393	3.09	14
Workers turnover, recruitment and changing crews	0	44	42	33	8	386	3.04	15
Out of sequence work assignments	0	48	27	52	0	385	3.03	16
Lack of labour recognition programs	23	29	11	64	0	370	2.91	17
Lack of places for eating and relaxation	24	16	39	48	0	365	2.87	18
Worker participation in decision making	0	44	75	8	0	345	2.72	19
Tools/equipment breakdown	0	68	29	30	0	343	2.70	20
Disregard of crafts' productivity improvement suggestion	33	36	11	47	0	326	2.57	21
Lack of proper resource allocation	16	48	46	17	0	318	2.50	22
Lack of authority to discipline craft workers	5	60	62	0	0	311	2.45	23
Lack of periodic meeting with labour	16	55	47	9	0	303	2.39	24
Accident at work sites	9	70	39	9	0	302	2.38	25
Lack of training sessions	31	48	17	31	0	302	2.38	25
Construction disputes	9	66	52	0	0	297	2.34	27
MSunderstanding between labour/superintendents	16	61	42	8	0	296	2.33	28
Employment mode	8	80	39	0	0	285	2.24	29
Poor communication	45	48	26	8	0	251	1.98	30
Lack of big picture view on behalf of the crafts	57	18	52	0	0	249	1.96	31

\*N = 127

**Discussion**

This study has shown that building craftsmen’ and project supervisors’/engineers’ perceptions of the relative effects of management-related factors on construction labour productivity are statistically the same. This implies that the selected project team members who constitute respondents for the study agree on the management-related factors that significantly and insignificantly affect construction labour

productivity. Based on this, the selected project team members considered ‘material management’, ‘quality of site management’, ‘lack of financial motivation system’, ‘supervision’, ‘crew size and efficiency’ and ‘firm reputation’ as the first five significant management-related factors affecting construction labour productivity respectively.

The ranking of ‘material management’, ‘quality of site management’ and ‘supervision’

among the first five significant factors affecting construction labour productivity support the findings in previous studies which emphasizes the significance of these factors among the first five factors affecting construction labour productivity (Ayandele, 1996; Alinaitwe *et al.*, 2007; Kazaz *et al.*, 2008). It is important to note that the previous studies that lay credence to this finding report cases for developing economies like Nigeria. Therefore, material management, quality of site management and supervision are serious management functions which affect construction labour productivity and underscore the need for improved management practices in these economies of the world.

Similarly, lack of financial motivation system and firm reputation ranking among the first five management-related factors affecting construction labour productivity concurs with conclusions in previous studies on the influence of motivation on workers' productivities (Thwala & Monese, 2008) and the existence of a relationship between firm's reputation and firms' performances in terms of profit (Lopez, 2006), organisational growth (Carmeli & Tishler, 2005) and return on assets (Deephouse, 2000). However, the effect of financial motivation on productivity has been debated in research studies. Onukwube *et al.* (2010) together with previous

works by Olomolaiye & Ogunlana (1988) and Kaming *et al.* (1998) argue that financial motivation has no significant effect on workers' productivity compared to other forms of motivation. Nevertheless, Enshassi *et al.* (2007) report that lack of financial motivation system ranked second out of six factors identified under motivation group of factors affecting construction labour productivity. Notwithstanding, this study has shown that financial motivation could be a useful managerial tool for improving workers' productivity in the study area. Crew size and efficiency which tie rank with firm reputation in the fifth position agrees with Ayandele (1996) study that size of the work groups together with other factors under competence of site management group was the most significant group of factors affecting construction labour productivity.

### **Conclusion/Recommendations**

This study concludes that building craftsmen' and project supervisors'/engineers' perceptions of the relative effects of management-related factors on construction labour productivity are the same. Therefore, they agree on management-related factors that significantly and insignificantly affect construction labour productivity. This implies that their combined opinion on management-related factors that significantly affect construction labour productivity could serve as

important inputs in the formulation of management strategies that will enhance productivity on construction sites. In view of this, 'material management', 'quality of site management', 'lack of financial motivation system', 'supervision', 'crew size and efficiency' and 'firm reputation' are the first five significant management-related factors affecting construction labour productivity respectively among twenty two other factors that could be utilized in drafting policies that will improve productivity on

construction sites. The study observes the need for improved management practices in underdeveloped and developing countries of the world to enhance productivity on construction sites. It is therefore recommended that construction managers should formulate policies incorporating significant management-related factors affecting construction labour productivity as part of productivity improvement strategies on construction sites.

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