Green Construction Practices (GCP) Implementation in Nigeria: How Far So Far?

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ARTICLE INFO	ABSTRACT
	The intense pressure for construction industry to remain proactive towards environmental issues is occasioned by the multi-dimensional role inherent with the sector. The sector's propensity towards actualization of global green agenda is equally acknowledged. More so, little is known about the extent of green construction practices (GCP) being implemented at individual-firm-project levels by built environment professionals particularly in the developing countries. Therefore, the purpose of this study is to determine the extent of green construction practices of built environment consultants in Nigeria. A structured questionnaire was personally administered through proportionate stratified random sampling to 375 these professionals namely; Planners, Architects, Quantity surveyors, Builders and Estate surveyors. A valid response of 233 was received, providing 62.1% response rate. Result from the descriptive statistics indicates that overall green construction practices (GCP) in Nigeria is moderately implemented. However, slightly implemented at firm level, moderately implemented at individual and project levels respectively. The findings of this research can be use for strategic policy framework in addition to supplementing the existing literature on green construction practices.

INTRODUCTION

In a debate on the role of construction industry towards environmental protection, the main question asked is the extent of green practice which can help to promote the overall environmental performance. Green construction practices (GCP) serves as remedial approach to problems associated with construction industry's negative environmental impact [1]. The pressure towards green practices among industry players are based on many problems of the sector and the failure of the previous practices [2]. One of the strategies to ensure green practice is that eco-friendly agenda is being practice at individual-firm-project levels and at the same time the determinants of these to happen are identified.

The need for green practices at all levels of construction processes as proposed by [3], is increasing the pressure on construction key industry stakeholders to implement proactive environmentally friendly strategies and actions in the design and construction process [4]. Determining the extent of green construction practices (GCP) by the industry professionals would indicate how far is the journey so far towards environmentally friendly practices. The aim of the paper is determine the level of green construction practices implementation by Nigeria's built environment professionals at individual-firm-project levels. In particular it attempts to answer the question of what extent is green construction been practice at various levels

Methodology:

The study adopts a survey approach. Data came from a structured questionnaire personally administered to the built environment professionals licensed to practice in their various domain. These consultants include planners, architects, quantity surveyors, builders and estate surveyors. The collection was done through a proportionate stratified random sampling involving 375 respondents. A valid response of 233 representing 62.1% was retrieved for subsequent analysis. The instrument was adapted from previous studies on green practices with modifications to suit the peculiarities with the study location. Instruments for green practices at individual level came from [5]; green practices at firm level adapted from [6], while that of project level came

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from [7]. Following [8] green practices implementation was measured based on five point likert scale ranging from 1=not at all, 2=slightly implemented, 3=moderately implemented, 4=implemented and 5=highly implemented. Reliability analysis performed indicates an acceptable alpha coefficient as shown in Table 1 below:

Table 1: Reliability Analysis of the instrument.

S/No	Description of Variable	Cronbach's Alpha Coefficient	Remarks
1.	Green Practice at Individual Level	.901	Reliable
2.	Green Practice at Firm Level	.887	Reliable
3.	Green Practice at Project Level	.879	Reliable

RESULT AND DISCUSSION

Result of descriptive statistics provided in Table 1 below shows that green construction practice (GCP) implementation at the individual level, having 9 items has a total mean of 23.5107 and a standard deviation of 6.48480. Green construction practice at firm level has a total mean of 22.0773 and a standard deviation of 5.97863. The total mean score for green construction practice at project level is 27.6309 with a standard deviation of 6.14139.

Table 2: Descriptive Statistics for GCP at Individual-Firm-Project levels.

	N	Minimum	Maximum	Mean	Std. Deviation
Total Green Practice at Individual Level	233	9.00	42.00	23.5107	6.48480
Total Green Practice at Firm Level	233	10.00	43.00	22.0773	5.97863
Total Green Practice at Project Level	233	10.00	50.00	27.6309	6.14139
Valid N (listwise)	233				

Furthermore, Table 3 below provides details of the average mean score for implementing green construction practices at various levels. The result indicates that, green construction practice at individual level has (2.6), GCP at firm level (2.2), GCP at project level (2.8) and the overall green practices implementation (2.5). following [9] interpretation of scores in likert scale. The result implies that, GCP at individual level is moderately implemented, at firm level slightly implemented, at project level moderately implemented while the overall implementation of GCP by Nigeria's built environment professionals is at moderate stage.

Table 3: Extent of GCP at Individual-Firm-Project levels in Nigeria.

S/No	Description Of Item	Score	Remark
1.	Green Practice at Individual Level	2.6	Moderately Implemented
2.	Green Practice at Firm Level	2.2	Slightly Implemented
3.	Green Practice at Project Level	2.8	Moderately Implemented
4.	Overall Green Construction Practices	2.5	Moderately Implemented

Summary:

This study has provide an empirical evidence of the extent of green practices implementation by built environment professionals in Nigeria. Theoretically, we extend the work of [10] and [11]by investigating GCP at individual-firm-project levels; complementing what [3] had suggested. Most of the previous studies focuses on GCP at one level or at best two levels with specific interest on drivers and or enablers of GCP see for example [10,11]. Little is generally known about the extent of GCP implementation so far, particular from the supposed creators of the built environment. The practical contribution of this paper is establishing a basis for strategic policy framework in addition to complimenting the existing body of literature on green construction practices. Specifically, the findings of this study suggest that Nigeria as a developing country have to do more to advance from the current level of moderate implementation in order to attain the goal of environmental sustainability. This further confirms that professionals in the built environment need improved proactive strategy towards environmental problems caused by the construction sector. The study bridge knowledge gap by providing how far so far in Nigeria's construction industry, multi-dimensional approach to determine GCP implementation at all levels and also complementing the existing literature on green construction practices. Further research on contractors, developers and other key stakeholder's response to green practices in construction can be explored. Also, since the present study employ a survey approach further investigation through interviews can be conducted for a better findings.

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