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Abandonment of Roof Construction and Its Covering of Construction Projects in Nigeria.

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ABSTRACT: *Numerous building developments are either unfinished or outright unused in Nigeria. The report examined potential reasons for roof constructions and coverings of construction projects, its causes, effects and solutions on the economy, society, and environment. The study was carried out through the personal interviews, the distribution of questionnaires, and reviews of the body of prior literature and scholarly journals all contributed to the collection of data that made up the data base. As evidenced by the data analysis, causes of abandonment of roof construction and roof covering on building projects in Nigeria include poor planning, and types and choices of roof construction and covering materials ranked first with RSI value of 0.857 (85.67%) and it has significant role to play in stage managing incidents of roof construction and roof covering as a cause of project abandonment followed by political interferences and inadequate machines and equipment with RSI value of 0.83 and 0.763 (83% and 76.33%) respectively and project leaders' lack of commitment ranked least with significant value of 0.597 (59.67). The effect of abandonment of roof construction and roof covering on building projects in Nigeria include provision of accommodation and hide out for criminals, unpleasant appearance, environmental hazard and pollution, loss of the national economy, environment and low development, deflection and leaking of roofing members, spread of fire from one building to another building, corrosion, rust, sagging and bending implication on roof members, refuse and waste dump. It was recommended that transparency, fairness, accountability, honesty and integrity should be the culture while National Construction Bank is to be established to rejuvenate several abandoned roof construction and coverings building projects in Nigeria.*

Keywords: abandonment, roof constructions, roof coverings, developments, projects

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I. INTRODUCTION

An abandoned project is unfinished project within the parameters of a contract which is considered to be neglected through many factors. Therefore, it is imperative to look within and consider the important variables working against project completion and occupation in line with its vision to avoid wastage. The process of creating a roof for a structure is called roof construction. One of the most crucial components when constructing homes and other constructions is the roof. Through the use of a waterproof outer shell, the roof shields the building's interior from the elements. On most construction sites, roof construction is one of the first tasks completed after the basic structure of the building's façade and load-bearing walls are in place because this protection is crucial.

There are numerous distinct roof construction techniques, and they vary depending on regional conditions, product accessibility, and regional customs. The most important aspect of building a roof is coming up with a good design. The use of roofing materials, the building method, and the overall durability and cost-effectiveness of the roof for the application are the three key components that make up a roof's design. These three characteristics serve as the determining criteria for whether a certain roof is suitable for a given application.

This study investigates the causes, effects and solutions of abandonment of roof constructions and coverings of government construction projects in Nigeria. The building industry is one of the sectors in which these projects are conducted. Government policies are frequently turned into programs and projects [1]. It is impossible to overstate the importance of government construction projects since they lay the groundwork for the rest of the economy to grow [2]. In fact, studies show that the implementation of government projects allowed developed economies to flourish and thrive [3, 4, 5, 6, 7]. The construction sector is complex since there are many different parties involved in a project, including clients, consultants, builders, shareholders, and regulators. The construction industry of every country is the engine room for economic expansion and its growth [8, 9, 10, 11]. Due to its complexity, decentralization, and primarily contractual labour-employment system, the industry is susceptible to subpar contract performance [12].

Construction projects largely rely on efficient use of project materials and management, and in order to grasp efficient project management, one must first understand what a project is. A project is any grouping of tasks and activities with a specific goal to complete within predetermined parameters, with an emphasis on the creation of business value, can be referred to as a project [13]. Therefore, it is impossible to overstate the significance of project management within the sector. But studies show that some of these projects fail due to delays, cost overruns, inadequate requirement standards, and complete abandonment [8, 9, 10, 14].

II. LITERATURE REVIEW

In order to evaluate the elements (causes) responsible for these failures, literature is currently available. However, these research [8, 9, 10] have primarily examined these issues from an industry-wide viewpoint or the private sector. This analysis departs from this overarching viewpoint and narrows its attention to solely government construction projects. We concentrate on government building projects because of their significance for a country's growth and development, particularly in emerging economies, and because of the many stakeholders and varied levels of authority and interest that are involved in these projects as well as their wide range of stakeholders.

Construction projects undertaken by the government, as opposed to the private sector, affect the general public both directly and indirectly. By offering jobs, social amenities, and other opportunities for associated development, it gives citizens a means for socioeconomic growth and development [2, 15]. Consequently, failure would have a huge impact on the residents and the overall growth of the country; as a result, it is necessary to research failure sources in order to limit and/or eliminate failure, allowing the general public to experience the greatest level of pleasure. Additionally, there are multiple stakeholders in government building projects with varying levels of interest and influence over the projects' outcomes. Some of these stakeholders might be at odds with one another, therefore variables that could cause failure and abandonment might not necessarily be comparable to those in the private sector, where making money is the main goal.

Additionally, because the management of the public sector is political in character, we concentrate on government construction projects in an emerging economy [16]. As a result, we assume that the variables that may affect construction projects may differ from those in the private sector or from the general variables that are frequently linked to the operating organizations [8, 9, 10, 11]. Furthermore, Nigeria serves as a model for an emerging economy where infrastructure development initiatives are the apex of progress, leading to a large number of government construction initiatives [2, 15, 16, 17, 18]. Developing nations frequently start construction projects as part of their development efforts [2, 8, 9, 10, 11, 15]. As a result, failure could have catastrophic effects on the citizens and the direction of development. Nigeria and other oil producing countries has reached a significant development in its history due to the expectation of oil money from its oil reserves [19]. As a result, the nation had the highest economic growth rate in the world in 2010 [20], at 20%.

However, research suggests that this is not the first time the government has excited the nation about construction projects. For instance, during the post-colonial era, the ideology of industrialization was used to transform many state policies into programs and projects; nevertheless, some of these programs and projects were unsuccessful [16, 21, 22, 23]. Therefore, it is essential to evaluate the elements that cause abandonment. The top ten (10) most important factors, according to the study, are political interferences, payment delays, partisan politics, bureaucracy, corruption, poor supervision, project leaders' lack of commitment, poor planning, starting more projects than the government can support, and changes in government.

III. RESEARCH OBJECTIVES

Through the following stated objectives, this study endeavor seeks to investigate the factors that contribute to the abandonment of roof construction and covering of building projects in Nigeria:

i. To examine the causes of abandonments of roof construction and covering of building projects in Nigeria.
ii. To examine the effects of abandonment of roof construction and covering of building projects in Nigeria.
iii. To proffer solutions to the problem of abandonments roof construction and covering of building projects in Nigeria.

IV. RESEARCH METHODOLOGY

The major research tool was a well-designed questionnaire, which was complemented by oral interviews (conducted in regional dialects) conducted with people living in the neighborhood where the abandonment occurred. A total of one hundred and twenty (120) questionnaires were directly issued with the aim of getting responses from construction companies, clients, and potential recipients of projects upon completion in order to identify the main causes, effects and solutions of roof construction and its covering project abandonment in Nigeria projects. In order to increase response rates, the questions were clear and easy, and the language used was appropriate for the survey demographic. In order to provide the researcher with opportunities to discover elements

responsible for abandoning roof construction and coverings projects in Nigeria, the data collected were presented in tabular form and simple statistical methods were applied.

Data sourced from various professionals within the built environment in the construction industry in Nigeria were analyzed using arithmetic mean and ranking by descending value methods of statistical analysis to include percentage among other methods. For assessment purpose, mean score was used to examine the causes, effects of project abandonment and to suggest possible remedial actions and results were ranked from which conclusions were deduced. In computing the arithmetic mean, the following formula was used:

$$\text{Mean score} = \frac{\sum W_i f_i}{\sum f_i}$$

Where $\sum w_i$ = the summation of the weights.

$\sum f_i$ = the summation of responses

The factors were measured by using the Likert scale involving rating on interval scale of 5 and 1 which was developed for application in social sciences and management researches for quantification of qualitative variable were used, namely:

5 represent "Extremely important (EI),"
4 represent "Very important (VI),"
3 represent "Somewhat important (SI),"
2 represent "Not very important (NVI),"
1 represent "Not important (NI)."

V. DATA ANALYSIS AND PRESENTATION

The data were presented using tables for clarification and better interpretation. The analysis tools included both descriptive and inferential statistics.

A. Respondents Profile

Table 1: Sex

Sex	Frequency	Percentage
Male	92	76.67
Female	28	23.33
Total	120	100.00

Table 1 showed the gender of the respondents. It showed that ninety two percent (76.67%) are male, and eight percent (23.33%) are female. The result shows the representation of genders in the construction industry in the study area.

Table 2: Professional qualification

Educational Qualification	Frequency	Percentage (%)
NIOB	44	36.67
NIQS	22	18.33
NIA	20	16.67
NSE	18	15.00
Others	16	13.33
Total	**120**	**100**

Table 2 represents the educational qualification obtained by the respondents. 36.67% is registered with NIOB, while 18.33% is registered with NIQS, 16.67% is registered with NIA, 15% with NSE and 13.33% with other professional bodies. The result shows that all respondents possess registration of their various professional bodies in Nigeria and adequate professional training to supply reliable data for the study.

The primary potential causes, effects and solutions contributing elements of abandonment of roof construction and roof coverings were used as the foundation for this study were afterwards assessed and graded. After that, each source was ranked to demonstrate its impact on project abandonment.

Table 3: Causes of abandonment of roof construction and roof covering on building projects

S/N	Causes of abandoned construction project	TWV	Percentage (%)	Rank
1.	Poor planning	514	85.67	1
2.	Political interferences	498	83	2
3.	Underpricing of Bill	420	70	5
4.	Project leaders' lack of commitment	358	59.67	10

5.	Inability to adhere to specifications and instruction	382	63.67	9
6.	Corruption	400	66.67	7
7.	Bankruptcy	444	74	4
8.	Inadequate manpower	418	69.67	6
9.	Poor supervision	386	64.33	8
10.	Inadequate machines and equipment	458	76.33	3
11.	Types and choices of materials	514	85.67	1

Tables 3 above pin points that poor planning, types and choices of roof construction and covering materials ranked first with RSI value of 0.57 (85.67%) and it has significant role to play in stage managing incidents of roof construction and roof covering as a cause of project abandonment followed by political interferences and inadequate machines and equipment with RSI value of 0.83 and 0.763 (83 and 76.33%) respectively. Project leaders' lack of commitment ranked least with significant value of 0.597 (59.67).

Table 4: Effect of abandonment of roof construction and roof covering on building projects

S/N	Effect of abandoned construction project	TWV	Percentage (%)	Rank
1	Provision of accommodation and hide out for criminals	434	72.33	1
2	Unpleasant appearance, environmental hazard and pollution	404	67.33	5
3	Loss of the national economy	432	72	2
4	Deflection and leaking of roofing members	434	72.33	1
5	Spread of fire from one building to another building	344	57.33	7
6	Corrosion, rust, sagging and bending implication on roof members.	428	71.33	3
7	Refuse and waste dump	402	67	6
8	Environment and low development	408	68	4

Table 4 confirmed that abandoned of roof construction and roof covering of building project caused the roof construction members to deflect and its covering to leak, unpleasant appearance, environmental hazard and pollution and it spreads of fire from one building to another. It provides accommodation and hide out for criminals. The effect of abandonment of roof construction and roof covering on building projects in Nigeria include provision of accommodation and hide out for criminals, unpleasant appearance, environmental hazard and pollution, loss of the national economy, environment and low development, deflection and leaking of roofing members, spread of fire from one building to another building, corrosion, rust, sagging and bending implication on roof members, refuse and waste dump.

Table 5: Solution of abandonment of roof construction and roof covering on building projects

S/N	Solution of abandoned construction project	TWV	RSI	Rank
1	Only new projects to be completed should be initiated	408	68	3
2	Accountability, transparency, honesty and integrity	342	57	4
3	Discourage of bureaucracy.	324	54	5
4	Discouragement of corruption at all level.	453	75.50	2
5	Government policy to reduces interest on bank loan	276	46	7
6	Legal actions and amendment	300	50	6
7	Scrutiny of current selling system	457	76.17	1
8.	Good and simple design	453	75.50	2

Table 5 shows that scrutiny of current selling system ranked first with RSI value of 0.762 (76.17%), simple design and discouragement of corruption at all level of government ranked first with RSI value of 0.755 (75.5%). Followed by %), simple design and discouragement of corruption at all level of government ranked first with RSI value of 0.75 (75%), and only new projects, which can be completed with the available resources should he initiated ranked third with RSI value of 0.68 (68%). Legal actions and amendment ranked least as the final resolution.

VI. CONCLUSION AND RECOMMENDATION

A. CONCLUSION

The process of creating a roof for a structure is called roof construction. One of the most crucial components when constructing homes and other constructions is the roof. Through the use of a waterproof outer shell, the roof shields the building's interior from the elements. On most construction sites, roof construction is one of the first tasks completed after the basic structure of the building's façade and load-bearing walls are in place because this protection is crucial. There must be adequate planning and co-ordination and there must be good and effective communication among site workers to avoid project delayed and abandonment. The roof construction materials must be readily available within the surroundings, stringent laws to eliminate quack/sharp practices and promote professionalism in design and construction works should be enacted and seriously enforced, there must be adequate accountability, transparency, honesty and integrity among the client, consultants and contractors.

The findings revealed that poor planning, political interferences, types of materials used for construction and covering, underpricing of Bill, lack of commitment of the clients, inability to abide with specifications and instruction, corruption, bankruptcy, inadequate manpower, poor supervision, inadequate machines and equipment for roof installation and coverings are the factors that cause the abandonment of roof construction and its coverings. The effect of abandonment of roof construction and roof covering on building projects in Nigeria include provision of accommodation and hide out for criminals, unpleasant appearance, environmental hazard and pollution, loss of the national economy, environment and low development, deflection and leaking of roofing members, spread of fire from one building to another building, corrosion, rust, sagging and bending implication on roof members, refuse and waste dump.

B. RECOMMENDATIONS

Based on the findings of this study and a review of previous research, the following recommendations were made:

i. There must be accountability, transparency, honesty and integrity.
ii. The roof construction and covering materials must be readily available within the surroundings.
iii. Stringent laws to eliminate quack/sharp practices and promote professionalism in design and construction works should be enacted and religiously enforced.
iv. Bureaucratic bottleneck should be avoided.
v. Government policy to reduce interest on bank loan should enhanced.
vi. There must be adequate planning and co-ordination.
vii. For the successful roof construction and covering work there must be good and effective communication among site workers.

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