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AN EVALUATION OF THE ENVIRONMENTAL FACTORS THAT LEAD TO ABANDONMENT OF BUILDING PROJECTS IN THE FEDERAL CAPITAL TERRITORY, ABUJA, NIGERIA

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ABSTRACT

This study evaluated the environmental factors that lead to abandonment of building projects with a view to proffering solutions to the abandonment of building projects in Abuja. The study evaluated the environmental factors that were responsible for the abandonment of building projects. A structured questionnaire was designed and administered to the in-house consultants of the Federal Capital Development Authority (FCDA) because they act as consultants on behalf of the government. Data was analysed using descriptive statistics to determine the Means, Percentages and Relative Importance Index (RII) and results were presented using Charts, Tables, The study revealed that legal factors was the highest ranked factor (RllofO. 76) among the other environmental factors that lead to abandonment of public building projects. The research concluded that the legal factors contribute largely and immensely to the abandonment of public building projects. The research recommends that the government should give priority to the legal aspect of the construction environment before embarking on any public building projects.

Keywords: Abandonment, Abuja, Environmental Factors, Public Building Projects.

INTRODUCTION

The construction industry is generally defined as economic activities that focus on the construction of physical projects, such as buildings and infrastructure, regardless of the construction being land or marine based (Osman, 2006). The success of a project is a very critical issue in the industry. However, the unceasing abandonment of building projects is so alarming such that it posed a challenge to the industry.

Dahlan (2001) defined the abandoned project as the project which had to be stopped owing to financial problems, or the developer of that project has disappeared. The author further contends that, from the planning point of view, the term 'abandoned project' refers to a project in which the construction work has been postponed, even though planning permission has been granted to the developer. Therefore, the significance that the incessant abandonment of projects would bring several effects on real properties and its values and the economy cannot be overemphasized since some of the building projects provide the basic services that should enhance the real properties developed (Ihuah *et al.*, 2014).

The continuous abandonment of building projects most especially the public building projects scattered across the length and breadth of Nigeria. According to a report by Nasir (2012), there are about eleven thousand, eight hundred and eighty-six (11,886) abandoned projects that will cost an estimated N7.78 trillion to complete! These alarming figures are from the report of the Presidential Projects Assessment Committee (PPAC) set up in March 2011, by President Goodluck Jonathan of Nigeria to look into cases of abandoned federal government projects.

The construction environment can be defined as the aggregate of surrounding, things, conditions or influences. Akinsola *et al.* (1997) describe this environment as all external influence on the construction process. Thus, the environment includes virtually everything outside the project; its technology, the nature of its products, customer and competitors, its geographical setting, and the economic, political and even metrological climate in which it must operate.

The causes and effects of these building projects abandonments are not just peculiar to a particular reason rather cut across several reasons (Ayodele and Alabi, 2011), and as well as creating a total dwindling effects on the values of developed properties located close and within the vicinity. Jude (2012) observed that the lack of proper cost advice, cost planning and cost control is the major reasons for the numerous uncompleted or abandoned infrastructure projects in the country. Therefore, cost is a very critical and significant factor in the success of any projects most especially building projects. Also, Adeshina (2010) in his work seek to appraise the causes and effects of project abandonment. In his opinion, the causes of

Primary data were collected using a structured questionnaire. Data analysis was achieved using descriptive analysis. Charts, Tables, Means, Percentages and Relative Importance Index (RII) were used to express the statistical results to achieve the objective of the research.
Relative Importance Index was used in this study to rank the environmental factors that lead to abandonment of building projects.

Relative Importance Index (RII) $= \frac{\sum fx}{\sum f} \times \frac{1}{k}$ ------------------------------ ------------3.1

Where,
$\sum fx$ = is the total weight given to each attributes by the respondents.
$\sum f$ = is the total number or respondents in the sample; K = is the highest weight on the Likert scale.
Ranking of the items under consideration was based on their RII values. The item with the highest RII value is ranked first (1) the next (2) and so on. The guide for the rating is given in Table 2.1

Table 2.1 Guide to Degree of Significance

Degree of significance	**Rating**
Very significant	0.76 above
Significant	0.67-0.75
Fairly significant	0.45-0.66
Not significant	0.44 below

Source: *Vanduhe (2012)*

RESULTS AND DISCUSSIONS

Breakdown of Administered Questionnaires

The questionnaires were administered to the respondents that included consultants such as Architects, Builders, Quantity Surveyors and Engineers (Structural, Electrical and Mechanical).
Not all the questionnaires administered were returned, forty two (42) questionnaires directed to the in-house consultants of the F.C.D.A were returned making a percentage of seventy five (75%). This is represented in Table 3.1.
From Table 3.1 based on the assertion of Moser and Kalton (1971), the result of a survey could be considered significant if the response rate is not lower than 30-40%. Therefore, the percentage of the returned questionnaires is adequate for analysis.

Table 3.1: Administered Questionnaires

	In-house Consultants
No. distributed	56
No. properly filled and returned	42
Percentage response	75%

RESPONDENTS PROFILE

Profession of the Respondents

Figure 3.1 shows Architects and Quantity surveyors have the highest percentage with equal percentage of 31 (%) followed by the Engineers with a percentage of 21 (%) while builders has the lowest percentage of 17 (%).

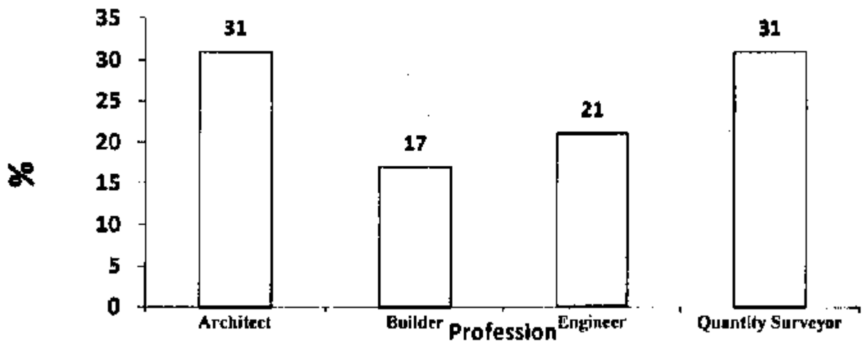

Figure 3.1: Profession

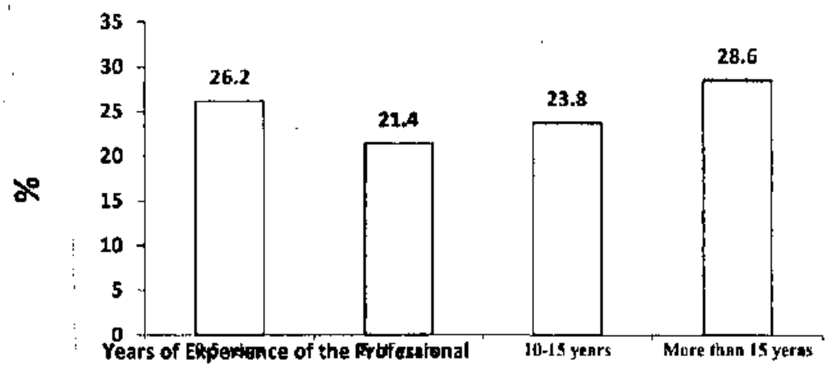

Figure 3.2: Years of Experience of the Professional

Years of Experience of Respondent

Figure 4.2 shows majority of the respondents has experience of more than 15 years with a percentage of 28.6 (%), followed by 0-5 years with a percentage of 26.2 (%), while 10-15 and 5-10 years of experience have 23.8 (%) and 21.4 (%) respectively. Therefore, the respondents can be said to have adequate knowledge and experience to participate in the exercise.

Evaluation of Environmental Factors Leading to Public Building Projects Abandonment

Evaluation of Economic and Financial Factors Leading to Public Building Projects Abandonment

Table 3.2 shows the ranking of the economic and financial factors which contain five variables. It was observed that all the variables have RII of between 0.77-0.87. Two of the variables obtained a RII of > 0.76 and are considered very significant variables. While the other variables fall within the range 0.67≤RII≤0.75 and are considered significant variables.

With the results obtained, it can be inferred that inadequate working capital is the most vital variable among the economic and financial factor variables that contributed to abandonment of public building projects followed by limited access to capital, therefore for successful execution of public building projects there should be regular provision of funds by the government.

Table 3.2: Economic and Financial Factors Leading to Public Building Projects Abandonment

S/N	Factors	Frequency of Response					∑f	∑fx	Mean	RII	Rank
		1	2	3	4	5					
1	Inadequate working Capital	0	0	8	11	23	42	183	4.36	0.87	1st
2	Access to capital	0	8	7	11	16	42	161	3.83	0.77	2nd
3	Inflation rate	0	7	9	18	8	42	153	3.64	0.73	3rd
4	Unexpected price rises for materials	0	8	8	18	8	42	152	3.62	0.72	4th
5	Unexpected price rises for labour	0	13	8	13	8	42	142	3.38	0.68	5th

(1 = Strongly- Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly-Agree)

Evaluation of Construction Technology Factors Leading to Public Building Projects Abandonment

Table 3.3 shows the ranking of the construction technology factors which contain five variables. As shown in the Table 3.3, all the variables have RII of between 0.56-0.70. One out of the five variables fall within the range $0.67 \leq RII \leq 0.75$ and are considered a significant variable. While the other variables fall within the range remaining $0.45 \leq RII \leq 0.66$ and are considered a fairly significant variables. It can be inferred that importation of materials and equipment is the most significant variable followed by late delivery of *materials and equipment that can contribute to abandonment of public building projects, as a result of the* difficulties and delay encountered in the importation of materials and equipment. Therefore, the materials and equipment should be made available even before embarking on any construction projects.

Table 3.4 shows the ranking of the political factors which contain five variables. One of the variables obtained a RII of > 0.76 and are considered very significant variable. While two variables fall within the range of $0.67 \leq RII \leq 0.75$ and are considered significant variables. Also, the remaining variables falls within the range of $0.45 \leq RII \leq 0.66$ and are considered a fairly significant variable. With the result obtained, it can be inferred that instability in governance contributed greatly among the political factor variables to abandonment of public building projects whenever there is a change in government in most developing countries, therefore for abandonment of public building projects to be reduce to the minimum, new government should finish the old projects undertaken by their predecessors before embarking on new projects.

Table 3.3: Construction Technology Factors Leading to Public Building Projects Abandonment

S/N	Factors	Frequency of Response					∑f	∑fx	Mean	RII	Rank
		1	2	3	4	5					
1	Importation of materials and equipment	0	10	9	14	9	42	148	3.52	0.70	1st
2	Late delivery of materials and equipment	5	8	9	14	6	42	134	3.19	0.64	2nd
3	Strike by the labour force	7	8	9	12	6	42	128	3.05	0.61	3rd
4	Shortage of plant/ scarcity of equipment parts	7	9	7	13	6	42	128	3.05	0.61	4th
5	Shortage of labour	8	13	7	9	5	42	116	2.76	0.56	5th

Evaluation of Political Factors Leading to Public Building Projects Abandonment

Table 3.4: Political Factors Leading to Public Building Projects Abandonment

S/N	Factors	Frequency of response									
		1	2	3	4	5	∑f	∑fx	Mean	RII	Rank
1.	Instability in Governance	0	7	6	12	17	42	165	3.93	0.79	1st
2.	Political agitation	5	5	6	10	16	42	153	3.64	0.73	2nd
3.	Political instability	5	5	6	15	11	42	148	3.52	0.70	3rd
4.	Legislation	6	7	7	15	7	42	136	3.24	0.65	4th
5.	Election	6	8	9	12	7	42	132	3.14	0.63	5th

(1 = Strongly- Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly-Agree)

Evaluation of Legal Factors Leading to Public Building Projects Abandonment

Table 4.5 shows the ranking of legal factor which contain three variables. It was observed that all the variables have RII of between 0.70-0.82. One variable obtained a RII of > 0.76 and considered a very significant variable. While the other two variables fall within the range $0.67 \leq RII \leq 0.75$ and considered significant variables. With the results obtained below, the type of contract has the highest RII values of 0.82 when compared with other environmental variables, it can be inferred that the wrong type of contract when use in building projects contribute greatly and immensely to the abandonment of public building projects, therefore for efficient implementation of building projects due process should be followed by the government officials before considering the type of public contract to be used in awarding the contract of public building projects.

Evaluation of Social and Cultural Factors Leading to Public Building Projects Abandonment

Table 3.6 shows the ranking of social and cultural factors which also contain five variables. Four variables fall within the range $0.67 \leq RII \leq 0.75$ and are considered significant variables. While the other variable fall within the range of $0.45 \leq RII \leq 0.66$ and are considered a fairly significant variable. It can be inferred that civil conflicts contribute in no small measure among the social and cultural variables to abandonment of public building projects. This might result to youth restiveness, kidnapping of expatriate or construction professionals and militancy in the area where the building projects is located. Therefore, government should ensure the project should be accepted by the host communities before embarking on any white elegant projects in the area as well as educate them on the benefits of the proposed project.

Evaluation of Physical Factors Leading to Public Building Projects Abandonment

Table 3.7 shows the ranking of physical factors which contain six variables. Five variables fall within the range of $0.67 \leq RII \leq 0.75$ and are considered significant variables. While the last variable fall within the range of $0.45 \leq RII \leq 0.66$ and are considered a fairly significant variable. With the result obtained, it can be inferred that unexpected geological condition and unfavourable site conditions can cause project to be abandoned before the commencement of the project and this can lead to unbearable consequences especially after the completion of the project. Therefore, proper attention must be given to the nature of topography of the area where the building project is located by thorough site inspections and site investigations before embarking on any project by the government.

Table 3.5: Legal Factors Leading to Public Building Projects Abandonment

S/N	Factors	Frequency of response									
		1	2	3	4	5	∑f	∑fx	Mean	RII	Rank
1.	Planning regulation	0	7	8	15	12	42	158	3.76	0.75	2nd
2.	Types of contract	0	0	8	22	12	42	172	4.10	0.82	1st
3.	Attitude of judiciary	0	8	12	15	7	42	147	3.50	0.70	3rd

(1 = Strongly- Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly-Agree)

Table 3.6: Social and Cultural Factors Leading to Public Building Projects Abandonment

S/N	Factors	Frequency of response									
		1	2	3	4	5	∑f	∑fx	Mean	RII	Rank
1.	Civil conflicts or disturbance (E.g. youth restiveness)	0	7	10	13	12	42	156	3.71	0.74	1st
2.	Beliefs/customs	0	7	16	12	7	42	145	3.45	0.69	4th
3.	Hidden obstruction	0	8	12	16	6	42	146	3.48	0.70	2nd
4.	Access to social amenities (E.g. med-care)	0	10	16	9	7	42	139	3.31	0.66	5th
5.	Literacy level	0	10	9	15	8	42	147	3.50	0.70	2nd

(1 = Strongly- Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly-Agree)

Evaluation of Project Environmental Factors

Table 3.8 shows the mean RII values of each of the environmental factors which contain six factors. It was observed that all the RII values fall between 0.62-0.76. Legal factors obtained a RII of 0.76 and are considered very significant factor. Four of the environmental factors fall within the range of $0.67 \leq RII \leq 0.75$ and are all considered significant factors. While the remaining factor falls within the range of $0.45 \leq RII \leq 0.66$ and are considered a fairly significant factor. With the result obtained, it can be inferred that legal factors when not properly considered before embarking on any project contribute largely and immensely among other environmental factors to the abandonment of public building projects. Therefore, the government should give priority to the legal aspect of the construction environment before embarking on any projects most especially white elegant projects.

Table 3.7: Physical Factors Leading to Public Building Projects Abandonment

S/N	Factors	Frequency of response									
		1	2	3	4	5	∑f	∑fx	Mean	RII	Rank
1.	Climatic conditions/ weather	4	11	5	11	11	42	140	3.33	0.67	5th
2.	Natural disaster (e.g. storms)	5	8	8	14	7	42	136	3.24	0.65	6th
3.	Fire and Land slide	0	10	9	14	9	42	148	3.52	0.70	3rd
4.	Unfavourable site conditions	0	9	6	17	10	42	154	3.67	0.73	2nd
5.	Unexpected geological condition	0	6	7	20	9	42	158	3.76	0.75	1st
6.	High water table	0	10	10	15	7	42	145	3.45	0.69	4th

(1 = Strongly- Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly-Agree)

Table 3.8: Project Environmental Factors

S/N	Project Environmental Factors	Average RII	Rank
1.	Economic and financial factors	0.75	2nd
2.	Construction technology factors	0.62	6th
3.	Political factors	0.70	3rd
4.	Legal factors	0.76	1st
5.	Social and cultural factors	0.70	3rd
6.	Physical factors	0.70	3rd

CONCLUSION

The study conclude that the economic and financial factors variables indicated that the inadequate working capital is considered to contribute immensely to the abandonment of building projects as a project cannot be executed successfully without regular provision of funds and this has been proven by so many researchers in their works. Another important variable that contribute greatly to the abandonment of building projects most especially in the host communities is the civil conflicts or disturbance by the youth in the area where the project is located. The survey considered the unexpected geological condition encountered on the site where the project is located as a critical variable contributing to project abandonment. This may lead to unbearable consequences if work has started before they are discovered. The study also conclude that the legal factors as the most important environmental factor that contributes immensely to the abandonment of public building projects. It therefore recommends that the government should give priority to the legal aspect of the construction environment before embarking on any projects most especially white elegant projects.

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