



THE COMPARATIVE ANALYSIS OF FACTORS AFFECTING RESIDENTIAL BUILDING OBSOLESCENCE IN ABUJA, NIGERIA

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Abstract

The significance of residential real estate property to the economy of Nigeria and various stakeholders cannot be overemphasized. This class of asset contributes to the gross domestic product of the country, also various stakeholders feel more comfortable in storing their wealth through this medium making the value of real estate properties of great importance. Meanwhile obsolescence is a serious threat for built property. Given its immobile, long lasting and capital intensive. Minimizing obsolescence is indispensable for the up keeping of the physical, economical and societal investment involved in it. This paper examines the comparative analysis of factors affecting residential building obsolescence in Abuja. The paper used self administered questionnaire to 116 respondents out of 171 registered estate surveyors and valuers firms in Abuja according to Niesv directory of 2021. Out of the 116 questionnaire given out 93 was dully filled and returned. The data obtained were analysed using relative importance index (RII) and linear regression analysis. This study shows that the causes of building obsolescence in Abuja are poor standard maintenance, natural deterioration, construction faults, age of building, poor accessibility and environmental pollution. It is then recommended that special attention should be paid to standard of building maintenance because it contributes predominantly to the longevity of buildings.

Keywords: *Comparative, Analysis, Affecting, Residential, building, obsolescence*

Introduction

With the passage of time, standards, tastes, and fashions change and new technologies create new possibilities and demands. Also, with the passing of

time, those things we build deteriorate and decay as they are subjected to daily use, gravity, pollution and the ravages of the climate. Furthermore, with time, local economic, social and environmental conditions change in ways that alter the relative locational advantages of one place as against another (Zivkovic, *et al.*, 2016). The volatility of these three key realities of perceived need, physical condition and best location means that, over time, there is a tendency for particular buildings to lose their fitness for purpose. This process of diminishing fitness for purpose is called obsolescence (Akindele, 2013; Zivkovic, *et al.*, 2016).

It is the desire to avoid obsolescence that acts as a motivating force to maintain, repair, improve, modernise, and renew buildings. Some of this work is reactive, but much needs to be planned for. Often times in history, buildings reach a certain stage where it can no longer perform its required use thereby becoming either out of taste or outright useless to the owner. This phenomenon can be attributed to changes that occur to the buildings, either by natural wear and tear or a case of change in taste of user overtime and can be termed obsolescence (Zivkovic, *et al.*, 2016). Obsolescence is commonly regarded as the beginning of the end-of-life phase of buildings (Thomsen & Flier, 2011).

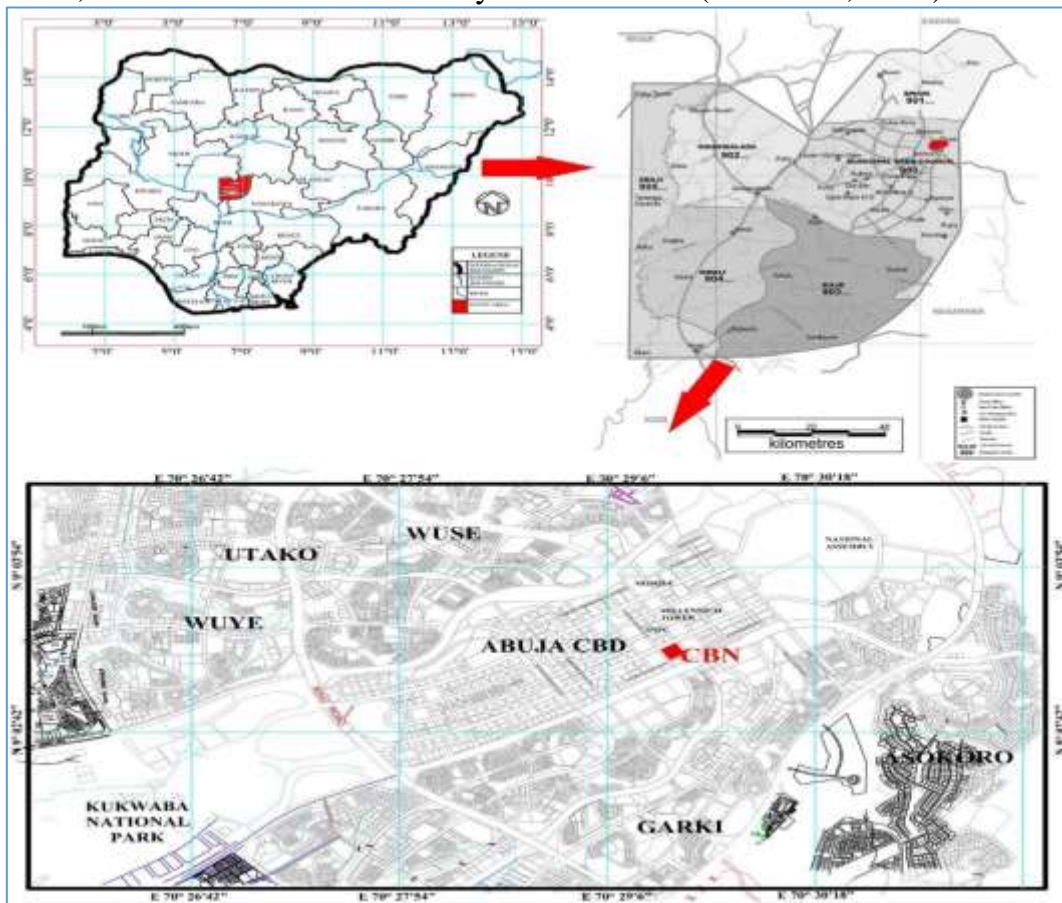
Obsolescence is a serious threat for built property. Given its immobile, long lasting and capital-intensive character and its societal and cultural significance on the one hand and the high uncertainty about their future lives on the other, minimizing obsolescence is indispensable for the up keeping of the physical, economical and societal investments involved (Thomsen & Flier, 2011).

The significance of residential real estate properties to the economy of a nation and the various stakeholders cannot be over-emphasised. This class of asset contributes to the gross domestic product of a nation, whereas some stakeholders (individuals and corporate) store their wealth in real estate, making the value of real estate properties to be of great importance to its holders (Abidoye & Chan, 2016). Obsolescence is not a natural phenomenon but a function of human action (Thomsen & Flier, 2011). Buildings are complex man-made artefacts and can only survive by means of regular reinvestments during its long service life. As a result, the total life cycle costs will generally be a multiple of the initial building costs (Boussabaine and Kirkham, 2004). These high costs demonstrate the relevance of avoiding and minimizing obsolescence and the need for knowledge how to achieve that. This study is therefore presents

the relationship between obsolete buildings and buildings in good condition, especially how obsolescence of a residential building affects the value of residential building in good condition.

Study Area

Abuja otherwise referred to as the Federal Capital Territory is the Capital of the Federal Republic (FCT) of Nigeria. The City is Located at Latitude 9.0765° N, and Longitude 7.3986° E. (See Figure 11). The territory is located north of the confluence of the Niger and Benue rivers. It is bordered by the states of Niger to the west and north west, Kaduna to the northeast, Nassarawa to the east and south, and Kogi to the southwest. FCT consist of six Local Area Councils: Abaji, Abuja Municipal (AMAC), Bwari, Gwagwalada, Kuje, Kwali, whereby AMAC is the Central area council referred to as Abuja. Abuja is a planned capital city, which was built in the 1980s and officially became Nigeria's capital on 12 December 1991, replacing Lagos though the latter remains the country's most populous city. Abuja's geography is defined by Aso Rock, a 400-metre monolith left by water erosion (Abubakar, 2014).



Review of Related Literature

The Concept of Building Obsolescence

Obsolescence is a concept that can be said to be ambiguous as the meaning tends toward the type one is describing at a particular point in time (Mansfield & Pinder, 2008). Following the definition of Oxford English Dictionary (2010), obsolete means ‘no longer used or practised; outmoded, out of date’, or ‘worn away, effaced, eroded; worn out, dilapidated; atrophied’, and the noun obsolescence as ‘the process or fact of becoming obsolete or outdated, or of falling into disuse’, or more specific ‘the process whereby or state at which machinery, consumer goods, etc., become obsolete as a result of technological advances or changes in demand. A building asset is described obsolete when it is judged to be completely and irredeemably unfit for its current purpose (Garnet, 2006).

In this extreme case, the rational response would be to clear and redevelop the site or to sell up and relocate. Obsolescence, however, is process of becoming obsolete. Obsolescence occurs when a building is judged to be becoming less fit for its purpose. Obsolescence may need to be counteracted, this brings about the need to make decisions: change the condition; change the form; keep the form/condition and change the use; keep the form/condition and use and change the rent; dispose of the building and move to new one (Garnet, 2006).

One basic fact about the concept of obsolescence is that its appearance or manifestation in buildings; be it social, physical, functional or economic has the tendency of negatively impacting on the values of such property especially where inefficiency is incorporated into its management (Olajide & Ijagbemi, 2019). Bearing in mind the key objective of property development and management to obtain optimum return any negative impact on the building may definitely jeopardize this objective (Thorncroft, 1965). Building obsolescence can therefore be defined as the diminishing usefulness and/or attractiveness of a building and/or a location with respect to the function for which the building was designed or used for a long time.

The theory of value might well serve as an introduction to a treatment of that phenomenon of building deterioration which is called obsolescence. Obsolescence and depreciation enact similar roles in the breaking down of value; their effect is to reduce the quantity and /or quality of the demand for the services of buildings, and consequently their productiveness and value (Burton,

1933). From the moment of construction buildings are subject to the process of physical deterioration and capital invested in them undergoes a gradual process of devaluation; as buildings age and decay they suffer from diminished utility and require a constant stream of capital investment (Bryson, 1997).

Obsolescence in building emanates from the concept of estate life cycle which establish the fact that a building is capable of being given birth to, grow, become old and capable of dying (Thorncroft, 1965; Baum, 1991). Obsolescence in building occur in five stages which include: predevelopment stage, newly developed stage, middle age, old age and total obsolescence stage. The period of acquisition of land or site for development, design, financing arrangement and other jobs needed to be carried out to the completion of the building construction is referred to as the predevelopment stage. The newly developed stage refers to the initial stage of development which is generally not affected by obsolescence as long as maintenance is adequate. The middle age is the stage where the advantage of being new disappears and the building settles down to its long-term level of utility and value during the period. Old age represents the stage when the building continues to sink rapidly in status. At this stage, building shows the sign of obsolescence, physical deterioration adaptation to poorer type of the use than that for which it has initially designed out of date fitting and finishing. Total obsolescence which represents the final stage of the estate life cycle is the stage when the estate has little or no value as it stands (Bryson, 1997).

METHODOLOGY

The study employs a field survey using simple and structured questionnaire. This is due to its effectiveness in seeking the views of the individual respondent on the factors affecting residential building obsolescence in Abuja. The study also uses interview in seeking the views of respondent on factors affecting residential building obsolescence. 116 questionnaires were distributed to estate surveyors and Valuers firms in Abuja. Out of which 93 were dully filled and return. Relative importance index and linear regression analysis was used to analyze the data collected. Base on this analysis, conclusions were drawn and some recommendation was made.

PRESENTATION OF DATA, ANALYSIS AND DISCUSSIONS

This section presents and discusses the empirical results obtained from the study.

Causes of Obsolescence in The Residential Properties in the Study Area

In satisfying the provision of the objective of this study, which is analysing the factors that causes residential properties obsolescence in the study area, the major factors that causes obsolescence in properties were identified from literature review and question was posed to respondents to ascertain which factor has more impact.

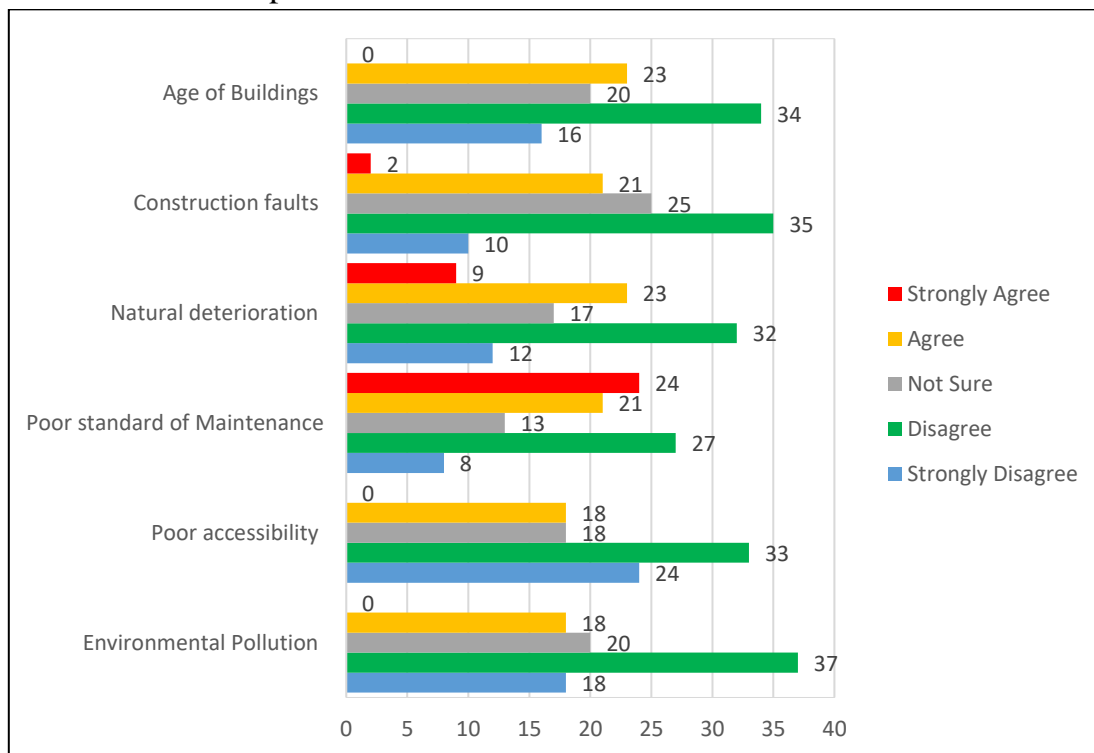


Figure 1.2 Factors that Cause Obsolescence of Residential Properties

Source: Field Survey (2021).

Result from the field survey as shown in Figure 1.2 presented that 34% disagree that age of building is the major factor that contributes to building obsolescence, whereas, 23% agree that it does. In other responses, 20% are not sure, while 16% strongly disagree that age of building is the major factor of building obsolescence. For construction faults, 2% of the respondents strongly agree that it is a major cause of building obsolescence, 21% agree, 25% are not sure, 35%

disagree while 10% strongly disagree. About 9% strongly agree that natural deterioration is a major factor of building obsolescence. About 23% also agree to this claim, but 17% are not sure, 32 % disagree and 22% strongly disagree. For poor standard of maintenance, 24% strongly agree that it is the major contributing factor of building obsolescence, and this is the highest percentage where respondent strongly agree. This could mean it is actually the highest contributing factor of building obsolescence in the study area. About 21% agree to this claim, 13% are not sure, whereas, 27% disagree, and 8% strongly disagree. About 0% percent strongly agreed that poor accessibility is a major factor of building obsolescence, 18% agreed, 20% are not sure, 37% disagree and 18% strongly disagree. Data also show environmental pollution as a major factor of building obsolescence, where 05 strongly agree, 18% agree, 20% are not sure, 37% disagree and 18% strongly disagree. Although this data is pointing to poor standard of maintenance as the major factor of obsolescence because it has the highest percentage of “strongly agree”, RII calculation in the next section clarifies which factor is predominant.

Relative Important Index (RII) of Causes of Obsolescence

$$RII = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{A * N} \text{----- (I)}$$

n_5 = Number of respondents for Strongly Agree

n_4 = Number of respondents for Agree

n_3 = Number of respondents for Neutral

n_2 = Number of respondents for Disagree

n_1 = Number of respondents for Strongly Disagree

A (Highest Weight) =5

N (Total number of respondents) = 93

Table 4.7: Calculating Relative Important Index (RII) of the Causes of Obsolescence in Residential Properties in the Study Area

Factors	Strongly Disagree (1)	Disagree (2)	Not Sure (3)	Agree (4)	Strongly Agree (5)	A (Total)	N	A * N	RII
Age of Buildings	16	68	60	92	0	236	93	46	0.50752
Construction faults	10	70	75	84	10	249	93	46	0.5354
Natural deterioration	12	64	51	92	45	264	93	46	0.56774

Poor standard of Maintenance	8	54	39	84	120	305	9	46	0.655913978
Poor accessibility	24	66	54	72	0	216	9	46	0.464516129
Environmental Pollution	18	74	40	36	0	168	9	46	0.361290323

Source: Field Survey (2021).

Result of the RII of the causes of obsolescence in residential properties in the study area shows that building age scored 0.507526882, construction faults scored 0.535483871, Natural deterioration scored 0.567741935, poor standard of maintenance scored 0.655913978, poor accessibility scored 0.464516129, while environmental pollution scored 0.361290323.

Table 4.8 Causes of Obsolescence in The Residential Properties of the Study Area

Factor	Relative Important Index	Predominance
Age of Buildings	0.507526882	4
Construction faults	0.535483871	3
Natural deterioration	0.567741935	2
Poor standard of Maintenance	0.655913978	1
Poor accessibility	0.464516129	5
Environmental Pollution	0.361290323	6

Source: Field Survey (2021).

Ranking the RII of the causes of obsolescence in the residential properties in the study area shows that; poor standard of maintenance ranked number 1, natural deterioration ranked number 2, construction faults ranked 3, age of buildings ranked 4, poor accessibility ranked 5 and environmental pollution ranked 6. From the result it is therefore concluded that poor standard of maintenance is the major cause of building obsolescence in the study area, whereas, environmental pollution is the least factor of building obsolescence in the study area.

CONCLUSION AND RECOMMENDATIONS

Conclusion

In conclusion, from the analysis above, it shows that there are different factors that cause building obsolescence from the study area which includes: age of building, construction fault, natural deterioration, poor standard of maintenance, poor accessibility and environmental pollution. The findings from the study reveal that the predominant causes of building obsolescence in the study area according to ranking are poor standard of maintenance, natural deterioration and construction faults, age of buildings, poor accessibility and environmental pollution. Among all these variables above, Poor standard of maintenance is identified as the most predominant one. The implication is that adequate attention has never been giving to building maintenance. Building owners are more concern with the aesthetic nature of their building appearance without considering the needs for the maintenance. This usually leads to building obsolescence which in the long run affects the value of the property negatively.

Recommendations

It is therefore recommended that special attention should be paid to standard of building maintenance because it contributes predominantly to the longevity of buildings. Maintenance is required throughout the lifespan of the buildings so that the various element of the building are kept to standard

Usually, obsolescence in building does not occur at once, it begins in parts and certain building components before it extend to other building components. It is recommended that special attention should be paid to building components installed during construction stage. Building components that have high quality standard should be used and they should be easily replaceable if the lifespan has been exhausted.

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