



**ASSESSMENT OF  
OBSOLESCENCE AND  
ITS IMPACT ON  
RESIDENTIAL PROPERTY  
VALUES IN  
KONTAGORA, NIGER STATE**

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**Abstract**

**T**his study examines the effect of obsolescence and its Impact on Residential Property Values in Kontagora, Niger State. Two areas were chosen in order to make a comparison between Tudun Wada and Nassarawa areas of Kontagora. The research analyzed 237 questionnaires. Data for the study were collected from primary sources. To obtain primary data, Structure questionnaires were administrated to the occupants of Residential properties in Tudun Wada and Nassarawa areas. The data were analyzed using descriptive statistical techniques, and Analysis of Variance. The result of Analysis of Variance indicates that there is statistical significant difference on the rental value of residential properties between the study areas. Descriptive

statistics was used to determine the factors that cause various form of obsolescence on Residential Property which reveals that poor maintenance habit of the

**KEYWORDS:**

Obsolescence,  
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landlord and the use of low quality material have the highest relative importance index as 0.82 and 0.70. It was recommended that landlord, contractors as well as tenants should endeavor to take extreme care of the building they possess and ensure constant routine maintenance of the residential property.

**Introduction**

**Background of the Study**

**W**hatever is human-made tends to become obsolete over time due to physical factors such as chemical degradation, physical damage, etc. However, the process of obsolescence is not limited to materialistic

and physical factors. Social, cultural, technological and political factors (such as technology innovation; variation in customer demands; change in existing legislation; social pressures; advancement of knowledge; inflation of currency; civil unrest or conflict of interests; etc.) can also drive obsolescence. Moreover, climate change is another and newest element which is acting as an additional driver of obsolescence in a number of ways both directly and indirectly.

Cowan and Bryon (2005) Obsolescence is a significant decline in the competitiveness usefulness or value of an article. Obsolescence occurs generally due to change or due to changes in user preference requirements or styles it is distinct from fall in value (depreciate) due to physical deterioration or normal tear and wear. Obsolescence is also an old fashioned and no longer useful, it is not necessarily age, however but change that is the chief cause of obsolescence.

Housing which is also known as residential property is one of the three basic needs of mankind and it is the most important for the physical survival of man after the provision of food (Olayiwola, et al., (2005). It encompasses all the ancillary services and community facilities which are necessary to human well-being and sustainable development. It is a package of services, including land, utilities and services and access to employment and social amenities as well as the structure or shelter itself. Although housing is an integral part of human settlement that fulfills basic need, and has a profound impact on the quality of life, health, welfare as well as productivity of man; large proportion of urban residents in developing countries do not have access to decent housing at affordable cost. Residential property delivery involves series of processes by which housing resources such as land, labour, finance and building materials are combined to produce new residential property units. According to Agbola and Alabi (2000), these could also involve the upgrading of existing units as well as distribution of both new and existing housing to consumers.

Property value is the money obtainable from a person's willing and able to purchase property which it offered for sale by a willing seller, allowing for reasonable time for negotiation and with the full knowledge of the nature and users which the property is capable of being put. Real property has no value if it has no utility, if it is not scarce and if it is not effectively demanded. Real property has significance only as it satisfies man's need and desires. It is this man's collective desire for real property that gives rise to value. (Olusegun, 2003).

### **Literature Review**

Over the past half of century, our country has been increasing the processes of ageing and obsolescence in building. An observation of buildings in any town will expose an array standard of physical ageing and condition. Many of the buildings

are also being used for a purpose rather than what it has been originally design for, these may lead to obsolescence on such property. (Thomsen and Meijer, 2006). A review of related literature has shown that obsolescence is a serious threat for built property given its immobile, long lasting and capital significance minimizing obsolescence is important for the presentation of the change of physical, economical and societal investment involved. Residential properties are constructed in circumstances of high uncertainty concerning their medium to long term lives. Andre and Vander flier, (2011). The act of construction is a commitment to physical durability and spatial fixity. This, together with the fact that most buildings are durable, means that they have to function in changing political, economic, social and technological conditions. The result is that every building undergoes a process of obsolescence as it exhibits a diminishing capability to meet evolving user expectations through time. In recent decades, the process of building obsolescence has been particularly problematic for residential property, as building life spans have become increasingly transient (Gann, 2000). Technological advances and changing occupier needs have resulted in many residential buildings being demolished after only 20 years life (Khalid, 2003). Furthermore, due to rapid innovation and development, future residential buildings are likely to enjoy even shorter useful life spans. Such a trend is considered to represent a widespread inefficiency in the use of physical resources, the costs of which are borne by property owners, occupiers and non-users. The trend has implications for the way in which residential buildings are designed and managed.

Previous studies of residential property obsolescence have focused almost entirely upon the financial impact for the property owner (Khalid, 2003). However, the limitations of this traditional approach have become increasingly apparent (Pinder and Wilkinson, 2000). Therefore, the research that was discussed in this work suggested that building obsolescence in residential property was examined from the perspective of the building occupants.

### **The impact of obsolescence on residential property**

The impact of obsolescence on a building can be classified into curable obsolescence and incurable obsolescence Van Kempen et al., (2006). Curable obsolescence is one that can be control by the building owner through choice of the construction materials, preserve high standards of maintenance and

refurbishment. But, it can only be managed to some certain extent. The factors of curable obsolescence includes

- a. Construction faults
- b. Level of deterioration
- c. Poor standard of services

Normally, curable obsolescence can be easily taken care off by means of maintenance or repair.

Incurable obsolescence being the results of unfortunate changes is less easily controlled by the building owner. The greatest that can be done is to integrate flexibility into the design of a building to make alterations and revisions easier in the future. The treatment of incurable impact of obsolescence requires the introduction of new characteristic into a building, which may not be similar with the existing structure.

### **Types of obsolescence**

Several literatures provide the distinctive types of obsolescence. Basically, the obsolescence is a sub-category of property depreciation besides deterioration. Deterioration occurred through normal wear and tear or environmental factors such as weather and related to passage of time (Hoesli & Macgregor, 2000). While obsolescence, as has been defined previously; is a loss or decline of utility and not directly linked to time. As far as the literature concerns, there are several types of obsolescence associated with the property. As mentioned by Reed and Wilkinson (2008), the identification and measures of each form of obsolescence is a conscientious process as the effect is of varying degree and it happens in a different period of time. They further explain a coinciding between each type of obsolescence where it creates a 'grim' area for form of property obsolescence. In general, the obsolescence can be separated into three (3) elements which are the Physical, Functional and Economic or External Obsolescence (Reilly, 2012; Reed and Wilkinson, 2008).

### **Physical Obsolescence**

This type of obsolescence involves the reduction of property value as a result of the normal wear and tear and the age factor of a building (Reilly, 2012). Reed and Wilkinson, (2008) added that the types of physical obsolescence in which it consists of curable physical deterioration, incurable physical deterioration (short life items) and physical deterioration (long life items). Physical deterioration

occurs more slowly than other forms of obsolescence, but it is predictable and curable provided the building is well maintained. The physical obsolescence is not as significant as functional and social obsolescence.

### **External Obsolescence**

This type of obsolescence is difficult to cure and hard to measure (pomykacz, 2009). External obsolescence decreases the value of residential property by external forces or factor outside the property. There are (3) categories of external obsolescence including locational, economic, and social obsolescence. Locational obsolescence is originated from changes in the geographical landscape such as proximity to negative environmental area or absence of land use controls (Reed et al., 2008). Whereas, economic obsolescence is referred to the condition of property market in regard to demand and supply (e.g. Over-supplied market) and it brings impact in a broader market and range of properties. Social obsolescence is associated with society changing taste perception (Kraus et al., 2009).

### **Functional Obsolescence**

This is defined as decrease in value as a result of incapability of the property to function for its intended use or designed (Reilly, 2012). It relates to the structure flaws, materials or design of the building, as to against the highest and the best use together with cost effective functional design requirement at the valuation date (Reed and Wilkinson 2008) and embedded to defects within the property. Besides, Hoesli & Macgregor (2000) opined that functional obsolescence as the inability of the structure to accommodate flexibility of usage such as floor to ceiling heights and the floor plan. The building originally was built functionally adequate at the time of construction. As time passed, the same building will no longer become functionally adequate as a result of change in design standards, mechanical system and construction materials.

Under the functional obsolescence, two features influencing property including technological and functional component can be found. Technological obsolescence is referred to as obsolescence due to rapid advancement of the computer. For instance, wireless technology may not be suitable in a building with restriction in design and construction. Technological obsolescence may also relate to the inadequate technological facilities inside building as to compare with the current state of the art technological building. Where, the absence of facilities will create a mismatch between the client's demand and services offered by property

and thus technological obsolescence may occur (Hoesli & Macgregor, 2000). Functional components are related to the building obsolescence and aesthetic obsolescence

### Research Methodology

The methodology for this research was developed based on the need of assessment of obsolescence and its impact on residential property values. The study administered 418 questionnaires to the occupants of residential properties in the study areas using systematic random sampling. Data were collected on impacts of obsolescence and rental value from the tenants of residential property out of which 237 were good for analysis. This study used Descriptive Analysis and Analysis of Variance (Anova), to analyze the data.

### Descriptive Analysis:

Statistics such as total return, standard deviation, variance and coefficient of variation. The use of mean rental growth is to calculate the mean of the rental growth of residential properties.

Annual holding period of return (income return) was determined as follows:

$$IR_t = \frac{Nit}{CV_{t-1}}$$

Where

IR<sub>t</sub> = income return for period t

Nit = net income received in period t

CV<sub>t-1</sub> = CV at the end of period t – 1

### Analysis of Variance (F – Statistics)

The level of the overall significant difference in property rental value returns and amount collected across the study areas make the study relevant to use Anova. ANOVA model can be stated thus:

**ANOVA(F – ratio)**

$$= \left( \left( \frac{\sum(X)^2}{n} - \frac{(\sum X)^2}{N} \right) \div (K - 1) \right) \\ \div \left( \left( \sum X^2 - \frac{(\sum X)^2}{N} \right) \div (N - K) \right)$$

### Discussion of Result

**Table 4.1: Showing Factors That Causes Obsolescence on Residential Property in Tudun-Wada Area of Kontagora, Niger State**

Various cause of obsolescence	Response						Descriptive statistics			
	SA	A	UN	D	SD	TOTAL	SUM	MEAN	RII	RANK
Poor maintenance habit of land lord	41	43	16	14	20	134	469	3.50	0.70	1
Intensive use of the building	28	26	32	20	28	134	408	3.04	0.61	4
Use of low quality material	41	29	16	27	21	134	444	3.31	0.66	2
The use of unqualified contractor	39	31	13	24	27	134	433	3.20	0.64	3
Change in taste of tenant	27	18	24	41	24	134	385	2.90	0.585	5

Source: Field Survey 2019

Strongly Agree (SA), Agree (A), Undecided (UN), Disagree (D) & strongly Disagree (SD).

Descriptive analyses of the opinion on the factors that causes obsolescence in residential properties is presented in table 4.1 above. Relative important index determined from average mean response of the opinion shows that poor maintenance habit of land lord leads to various form of obsolescence which has highest relative important index at 0.70, the use of low quality material as 2<sup>nd</sup> reason which cause obsolescence on residential property ranked as 0.66, while change in the taste of tenant ranks as 0.58 which is the last factor that lead to obsolescence in Tudun wada

**Table 4.1.1 Showing Factors That Causes Obsolescence on Residential Property in Nassarawa Area of Kontagora, Niger State.**

Various cause of obsolescence	Response						Descriptive statistics			
	SA	A	UN	D	SD	TOAL	SUM	MEAN	RII	RANK
Poor maintenance habit of land lord	11	10	17	37	28	103	248	2.40	0.48	4
Intensive use of the building	19	24	17	23	20	103	308	2.99	0.59	3
Use of low quality material	24	19	27	15	18	103	405	3.90	0.82	1
The use of unqualified contractor	22	28	11	19	23	103	316	3.10	0.62	2
Change in taste of tenant	26	19	14	23	19	103	321	3.11	0.62	2

Source: Field Survey 2019

Table: 4.1.1 shows that descriptive analyses of the opinion of factors that causes obsolescence in Nassarawa Residential Properties, which the relative index determined from average mean response of the opinion indicate that the use of unqualified contractor rank 1<sup>st</sup> as 0.80 is the major factor that causes obsolescence, use of low qualify material and change in taste of tenant as 2<sup>nd</sup> rank 0.62, intensive use of building ranked 0.59, which poor maintenance habit as the last factor that lead to obsolescence ranked as 0.48.

**Table 4.2. Showing Rate of Returns on 1Bed Room Residential Property Rental Values in Kontagora.**

Year	Tudun-Wada	Nasarawa
2009	2.17	2.28
2010	2.23	2.31
2011	2.62	2.73
2012	3.03	3.73
2013	3.17	4.09
2014	5.24	5.33
2015	5.33	5.50
2016	4.83	4.95
2017	4.24	4.29
2018	6.23	6.27

Source: Field Survey, 2019

The rate of returns on 1B/R property rental value in Kontagora is presented in table 4.2. This showed the annual trends in returns of 1B/R properties over a period (2009-2018). The returns in Tudun-Wada and Nassarawa maintained single digit returns on 1B/R rental value in the ten years periods. Also with the single digit rate of returns, obsolescence still show in the variantion which Nasarawa area have high retuns than the Tudun-Wada, this means rate of obsolescence in Tudun-Wada affect the rental income returns of the residential properties.

**Table 4.2.1. Showing Rate of Returns on 2Bed Room Residential Property Rental Value in Kontagora**

Year	Tudun-Wada	Nasarawa
2009	2.59	2.65
2010	3.23	3.73
2011	3.56	3.64
2012	6.53	6.84
2013	9.12	9.59
2014	8.09	8.21
2015	8.40	8.66
2016	7.86	7.95
2017	8.16	8.22
2018	9.04	9.11

Source: Field Survey, 2019

The rate of returns on 2B/R property rental value is presented in table 4.2.1. This showed the annual trends in returns of 2B/R properties over a period (2009-2018). The returns in Tudun-Wada and Nassarawa maintained single digit returns on 2B/R property returns over the periods. Obsolescence still show in the variation which indicate that Nasarawa area have high returns than the Tudun-Wada, this means that rate of obsolescence in Tudun-Wada affect the rental income returns of the residential properties.

**Table 4.2.2 Showing Rate of Returns on 3Bed Room Residential Property Rental Value in Kontagora**

Year	Tudun-Wada	Nasarawa
2009	3.09	3.26
2010	4.12	4.14
2011	4.97	5.01
2012	5.17	5.20
2013	5.27	5.50
2014	6.42	6.44
2015	7.29	7.45
2016	7.36	7.41
2017	7.29	7.31
2018	8.09	8.12

Source: field Survey, 2019

The rate of returns on 3B/R property rental value is presented in table 4.2.2. This showed the annual trends in returns of 3B/R properties over a period (2009-2018). The return in Tudun-Wada and Nassarawa maintained single digit returns on 3B/R property return over the periods. In the table above there are differences on the rates of returns of rental value between the two study areas, due to rate of obsolescence on residential properties in Tudun-Wada, it affect the rental value of property.

**Table 4.3. Showing the Analysis of Variance of One Bedroom Rental Value of the Study Areas.**

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	0.285605	1	0.285605	0.141207	0.711476	4.413873
Within Groups	36.40685	18	2.022603			

Total	36.69246	19				
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Source: Computed from Table 4.2

The result of analysis of variance in mean value of one bed room rental value revealed that the F-statistics at (0.141207) is less than the P-value (0.711476); this is an indication that there is statistical difference in the rental value of residential property in the study area.

Table 4.3.1. Showing Analysis of Variance of Two Bedroom Rental Value of the Study Areas.

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	0.20402	1	0.20402	0.031404	0.861322	4.413873
Within Groups	116.9406	18	6.496698			
Total	117.1446	19				

Source: Computed from table 4.2.1

From table 4.3.1 above, p-value of (0.861322) is higher than F-statistic (0.031404) this is an indication that there is statistical difference on the rental value of 2bed room residential property in the study area.

Table 4.3.2 Showing the Analysis of Variance of Three Bedroom Rental Value of the study areas.

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	0.029645	1	0.029645	0.011293	0.916544	4.413873
Within Groups	47.25045	18	2.625025			
Total	47.2801	19				

Source: Computed from Table 4.2.2

From table 4.3.2 above, it indicates that there is statistical significant difference for p-value as (0.916544) while the F-statistic as (0.011293) on 3bed room rental value of the study areas. From the analysis of variance of 1bed room, 2bed room, 3bed room, it all shows that the rate of physical obsolescence on residential

properties in Tudun-Wada affected the rental values in the area, which has statistical differences with that of Nassarawa area.

**Table 4.4 Showing Impact on the Level of Obsolescence in the Study Areas**

Impact on Obsolescence	Tudun-Wada	Nassarawa
Void Property	21 (25.6%)	8 (18.6%)
Income/Return	30 (36.6%)	17 (39.5%)
Occupants	24 (29.3)	15 (34.9%)
Life Span	7 (8.5%)	3 (7%)
Total	82 (100%)	43 (100%)

**Source: Field Survey 2019**

From table 4.4 above it shows that income return from both study areas shows that the income return with 36.6% in Tudun-Wada and 39.5% in Nassarawa, meaning the returns are affected by the said percentage through obsolescence. A void property which means the properties that are not occupied due to obsolescence which Tundu-wada have 25.6% and Nasarawa 18.6%. Also if urgent maintenance work is not carried out in some of the selected properties 29.3% are likely vacating in Tudun-wada, the said percentage of occupant may likely vacate their properties, and Nasarawa have 34.9%, this means that the occupants in Nassarawa are only 15 in number. This does not mean Nasarawa have higher impact, Tudun-wada have higher impact with 24 occupants. In the aspect of life span 8.5% impact on obsolescence in Tudun-wada and 7% impact on obsolescence in Nassarawa area.

### **Conclusion**

In conclusion, poor maintenance of the residential properties lead to an increased rate of obsolescence of the same properties, it is of vital importance to the management of these properties, as maintenance is one of the most fundamental strategic issues in taking care of property. There is no doubt that obsolescence has a negative effect on residential property values. This research work has analyzed data and made comparison between two neighborhoods and established the fact that the rate of obsolescence affects the rental property values. In light of the fore going the research has thrown more light on the need to embark on effective and adequate maintenance culture in order to keep a property in a state of commanding its rent. It is therefore expected that property owners as well as the

tenants or occupiers of a building should always carry out regular inspection of their property so as to ensure a good preventive maintenance.

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