Research Journal of Engineering and Environmental Sciences

Journal homepage: www.rjees.com

RJEES

Original Research Article

EFFECT OF HOUSING FACILITIES ON RENTAL VALUES OF RESIDENTIAL PROPERTIES IN BENIN CITY

[1]Asikhia, M.O., [1]Eghagha, N.W. and [2]*Eyakwanor, A.A.

[1]Department of Geography and Regional Planning, University of Benin, PMB 1154, Benin City, Nigeria
[2]Department of Architecture, Faculty of Environmental Sciences, University of Benin, PMB 1154, Benin City, Nigeria
* akpovi.eyakwanor@uniben.edu; monday.asikhia@uniben.edu

ARTICLE INFORMATION

ABSTRACT

This study examined the impact of available housing facilities on rental value variation among residential properties in Benin City, Edo State, Nigeria. Where these facilities are available, it is believed that the rental value of residential properties would be high. To examine this, primary data was used in the analysis and testing of the hypothesis of the study. In all, 300 questionnaires were administered in three neighborhoods where respondents were randomly selected along major streets. Multiple regression models were used to test the hypothesis and the results revealed that the availability of standard housing facilities had a significant impact on the rental value of residential properties in Benin City. The paper thus recommends that if the quality and value of residential properties in Benin City is to be improved upon, especially in the core area of the City, the main emphasis of government will be to ensure that properties are not only structurally sound but have standard internal facilities.

1. INTRODUCTION

A functional residential building is crucial to the development of a healthy and comfortable living environment. It is one of the three basic needs of man coming next in importance to food. Its importance lies not only in its value for individual households residing in it, but also in the neighborhood where it is located. Just as a building is meant to be accessible, it is also meant to provide comfort for the occupier and comfort can only be obtained from the availability of adequate and appropriate facilities within and around the building. For the purpose of this study the term "housing facilities" consists of the internal facilities and the

structural form of the house. Internal facilities include toilet/bathroom, kitchen, water supply, and burglary proof, among others. Residential properties are properties that are occupied in order to provide shelter for the occupants and serve as a habitation for them. Rent is the monthly payment that a tenant pays for his/her occupation of a property whether residential or commercial, usually payable to a landlord, and is also construed as payment for the use of a building (Aina et al., 2007). Studies have however shown that the value or rent placed on a residential property is actually a summary valuation of the facilities contained therein.

As Megbolugbe (1986) states, housing is to be considered as a combination of services and must be purchased as a package. Studies by Lawrence (1962), Goodman (1978), Megbolugbe (1986), Megbolugbe (1991), and Black (1999) show that housing prices reflects the renter's valuation of particular sets of attribute of the property. Their findings revealed that houses with more bedrooms, living space and generally good facilities are far more expensive than similar houses that are deficient in these attributes. Mallo and Anigbogu (2009) noted in a study in Jos, Plateau State, Nigeria that although housing facilities affect rent charged on houses, there exists inequalities in the living conditions of residents across neighborhoods due to differences in availability of these facilities. He opined that houses in the low density areas of Jos are of greater value than those in high density areas because of the overall quality of housing infrastructure and availability of adequate housing facilities per household size. The study by Olujimi and Bello (2009) on the effects of infrastructural facilities on the rental values of residential properties in Akure, revealed that infrastructural facilities contributed 30.5 percent in the determination of rental values of residential buildings in Akure; of which the provision of wall fence around the building and the installation of burglary proof in all the windows played the most important role. It was noted that these facilities are safety inclined thus stressing that although other facilities such as water supply, floor or ceiling finishing are seemingly important, tenants are willing to pay more for houses with safety facilities since they value the safety and security of their lives and property more than the aesthetic quality of the properties.

While several studies before now have examined the effect of housing facilities on rent, very few of such have been carried out in Benin City. It is on this basis that this study investigates and analyzes residential property rent in relation to available housing facilities in different categories of neighborhoods in Benin City.

2. MATERIALS AND METHODS

2.1. Study Area

Benin City is the capital and largest urban center in Edo State. The city itself is located between latitude 6°19′N and 6°13′N and longitude 5°36′E and 5°60′E in the tropical belt of the rainforest region of Nigeria. The city is made up of three local government areas (LGAs) namely; Oredo, Egor, and Ikpoba-Okha as well as parts of Ovia-Northeast and Uhunwunde. However with respect to this study, Egor and Oredo were the source LGAs for the selected neighborhoods; Ogboka and GRA in Oredo LGA, and Ugbowo in Egor LGA.
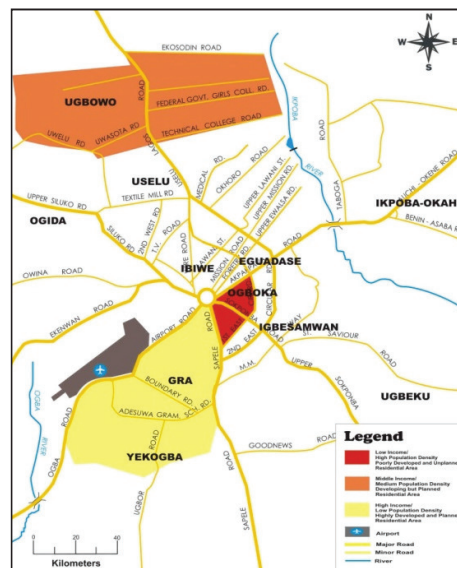
Figure 1: Map of Benin City showing the study area

2.2. Data Collection and Analysis

This is a cross sectional survey study hence the primary data was collected through the administration of questionnaires. Residential classification based on population densities and income levels were used. Three types of neighborhoods were identified as shown in Figure 1. The samples for this study were residential properties in the stratified neighborhoods in the study area. In determining the sample size that was adequate for this study, the research sought to define a sample of tenement population to ensure at least 95% level of confidence and that probable error of using a sample rather than surveying the whole population did not exceed 0.05. Using the derived value for the combined household units for Oredo and Egor LGAs as the population size, the sample size for this study was determined to be 300. In this case, the questionnaire was administered in relation to the population density of each neighbourhood in the ratio; 40:35:25 in Ogboka, Ugbowo and GRA respectively. Consequently, one questionnaire was administered per household. In a situation where more than one household resided in a particular property, only one household was interviewed. The interview was targeted only at the head of a household, but in the absence of the head, the spouse was interviewed.

In order to achieve the stipulated objectives of the study, the data gathered from the questionnaire was analyzed using descriptive methods such as frequency counts, percentages, ranking, tables, etc. Multiple regression analysis was used to test the hypothesis of the study which states that housing facilities do not have an effect on rental values of residential property in Benin City. The model assumes that variations in rent are partly due to variations in available housing facilities (the explained variation) and partly due to certain random disturbances which are not directly observed (unexplained variation). Gupta (2001) defines regression as the measure of the average relationship between two or more variables in terms

of the original units of the data. The model was used to show the relationship between rental value and housing facilities. The multiple regression model was of the form:

$$Y = a + b_1x_1 + \ldots\ldots + b_nx_n \tag{1}$$

Where:

Y = the dependent variable (the mean rental value for each neighborhood)

a = constant parameter

$b_1,\ldots b_n$ = the regression coefficients

$x_1,\ldots x_n$ = the independent variables

Analysis of variance (ANOVA) was used to test for the differences in means during the regression analysis. The F-ratio was used to test for statistical significance.

2.3. Hypothesis of the Study

The hypothesis was stated as follows:

H_o: There is no significant relationship between available housing facilities and rental values of residential property in Benin City.

3. RESULTS AND DISCUSSION

The structural form and the availability of standard housing facilities in a residential property, determines its quality, rental or property value. Table 1 shows this relationship in the neighborhoods.

Table 1: Housing facilities in relation to rental value

Factor	Categories	Indices	Neighbourhood					
			Ogboka		Ugbowo		GRA	
			%	Rank	%	Rank	%	Rank
Housing facilities	Structural Characteristics	Roof (Aluminum)	10.6	3	33.7	2	79.5	1
		Ceiling (POP/PVC/decked)	4.4	3	73.3	2	79.5	1
		Floor finishing (Tiles/terrazzo)	15.0	3	84.0	2	94.5	1
		Wall material (Cement/plastered)	45.0	3	100.0	1	100	1
		Wall fence (Yes)	15.9	3	79.2	2	100	1
		Burglary proof (Yes)	43.4	3	97.0	2	97.3	1
	Internal Facilities	Water (In-compound borehole)	5.3	3	57.4	2	58.9	1
		Electricity (Constant)	38.0	3	43.6	2	65.8	1
		Kitchen facilities (Exclusive)	15.9	3	98.0	1	96.0	2
		Bathroom facilities (Exclusive)	15.9	3	99.0	2	100	1
		Toilet facilities (Exclusive)	15.9	3	99.0	2	100	1
Total	Score			33		20		11
	Rank			3		2		1
Average rent			N7,234.01		N26,162.87		N47,499.66	

Table 1 shows that residential properties in Ogboka have very poor structural characteristics. Only 10.6% have standard roofing sheets, 4.4% have standard ceiling finishing, 15% have standard floor finishing, another 45% have walls made of cement or were plastered, the rest being made of mud while as low as 15.9% and 43.4% have wall fence and burglary proof respectively. At the other extreme, the residential properties in GRA are of the highest

structural characteristics. 79.5% of the residential properties have aluminum roofing sheets, another 79.5% have POP/PVC/decked ceiling finishing, and 94.5% have floor finishing that are of either tiles or terrazzo. All the properties have walls made of cement and also have wall fence, while 97.3% have burglary proof. However, the residential properties in Ugbowo are of lower structural characteristics compared to those in GRA. Only 33.5% have standard roofing sheets, 73.3% have POP/PVC/decked ceiling finishing, and 84% have floors that are either tiled or made of terrazzo. All the residential properties have walls made of cement or were plastered, while only 79.2% and another 97% have walled fence and burglary proof respectively.

With respect to internal facilities, the residential properties in Ogboka are equally deficient. Only 5.3% have in-compound borehole. Majority have wells where water collected from roof tops during the wet season is stored. Although electricity appears to depend on public supply, only 38% have constant electricity supply. Similarly, as low as 15.9% of the residential properties have exclusive kitchen, 15.9% have exclusive bathroom facilities and another 15.9% have exclusive toilet facilities. GRA has the highest proportion of residential properties with standard internal facilities. 58.9% have in-compound boreholes, 65.8% have constant electricity supply, and 96% have exclusive kitchen facilities. All the properties however have exclusive bathroom and toilet facilities. Residential properties in Ugbowo are less adequate in internal facilities than those in GRA. Although 57.4% have in-compound borehole, only 43.6% have constant electricity supply. 98% however have exclusive kitchen facilities while 99% have exclusive bathroom and toilet facilities. The ranking of the indices of housing facilities shows the neighborhood that has the highest housing quality. Table 1 shows that GRA scored the least sum total (11), making it the neighborhood with the highest housing quality, followed by Ugbowo (20) while Ogboka has the poorest housing quality with a score of 33.

The foregoing discussion indicates that the residential properties in Ogboka are generally of poor quality while those of GRA and Ugbowo are of higher quality. Onokerhoraye (1976) in his study of housing pattern in Benin City found that the structurally unsound and substandard houses in Benin City are particularly concentrated in the city core. Neighborhoods in this area of the city such as Ogboka are characterized by old traditional compounds built with mud, with absence basic housing facilities. Consequently their value will be low, as compared to more structurally sound and facility fitted properties in Ugbowo and GRA. These neighborhoods are located outside the city center and have higher housing quality than those in the city center. Table 1 also shows the average rental values in relation to the housing quality of the neighborhoods. Ranking 3rd, residential properties in Ogboka are of the poorest quality and equally have the lowest rental values, with an average low of approximately N7,000 monthly. Ranking 2nd, residential properties in Ugbowo are of more quality than those in Ogboka and have a higher rental value, which is at an average high of approximately N26,000 monthly. In GRA the residential properties are of the highest quality, ranking 1st and having the highest rental values which is at an average high of approximately N47,500 monthly.

Table 2 shows the results obtained from the test of the hypothesis of this study after the application of multiple regression analysis. From the regression result, the rental value of residential property in Benin City is directly proportional to the availability of wall fence and type of roof, and number of rooms a residential property has, i.e. rental values increases with the presence of wall fence, standard roofing sheets and floor finishing and more number of rooms in a residential property. Though floor finishing is statistically significant, it has a negative relationship with rental value. However, wall material, toilet/bathroom facilities, burglary proof and source of water supply do not show statistically significant relationship with rental value. Table 3 shows that the F-ratio is 42.919 with a P-value of 0.000. In addition, details of the R^2 and adjusted R^2 (adjusted for degree of freedom) are shown in Table 4.

Table 2: Summary statistic of the relationship between rental value and housing facilities variables

Parameter	Unstandardized Coefficients		Standardized Coefficients	T- Statistic	P-value
	Estimate	Standard Error	Beta		
(Constant)	-0.392	0.557		-0.703	0.483
Type of house	-0.183	0.080	-0.141	-2.300	0.022
Wall fence	0.554	0.145	0.261	3.810	0.000
Wall material	-0.059	0.067	-0.054	-0.875	0.382
Toilet facility	-0.116	0.115	-0.093	-1.009	0.314
Floor finishing	-0.320	0.075	-0.310	-4.261	0.000
Burglary proof	0.032	0.125	0.013	0.259	0.796
Source of water	0.041	0.123	0.021	0.331	0.741
Roofing type	0.200	0.070	0.172	2.866	0.004
No. of room	0.417	0.091	0.210	4.579	0.000

Table 3: ANOVA results

Source	Sum of Squares	Degree of freedom	Mean Square	F-Ratio	P-value
Regression	163.588	9	18.176	42.919	0.000[b]
Residual	113.076	267	0.424		
Total	276.664	276			

Table 4: Model summary of regression analysis

Source	R	R^2	Adjusted R^2	Standard Error of the Estimate
Regression	0.769	0.591	0.578	0.651

From Table 4, the R-squared statistic indicates that housing facilities explains 59.1% of variability in rental values of residential properties in Benin City. The adjusted R-squared statistic, which is more suitable for comparing different numbers of independent variables was 57.8%. This means that the independent variable (housing facilities) did very well to explain 57.8% of the variation or change in the dependent variable (rental value). Also from the ANOVA results in Table 3, the relationship between rental values of residential property and housing facilities shows the F-ratio is 42.919 and has a P-value of 0.000, which is less than 0.05. The F-ratio falls in the rejection region signifying that the null hypothesis which states that "housing facilities do not have an effect on rental values of residential property in Benin City" is therefore rejected while the alternative hypothesis which states that "housing facilities do have an effect on rental values of residential property in Benin City" is accepted. This

confirms the fact that the higher the structural quality and availability of internal facilities in a residential property, the higher its rental or property value. Therefore it is plausible to concede that when more of such properties are located in a neighborhood, value and quality of residential land use will also be high. Thus the rental value of a property does not only reflect its structural and facility adequacy, but also the neighborhood it is located in. It was therefore not unexpected that as the availability of housing facilities increased from Ogboka to GRA, so also does the rental value of the residential properties.

4. CONCLUSION

The study has investigated the impact of housing facilities on rental values in Benin City. It can be said therefore that availability of standard housing facilities can be used as a yard stick for determining the value and quality of a residential property. Ensuring that the quality and value of properties is improved upon in the city, the appropriate arm of government should be mobilized and equipped to enforce statutory laws and edicts guiding the development of residential properties. This will ultimately aid and support the efforts of the development unit of town planning authorities, increase revenue for government through tax and enhance the living conditions of the urban populace with respect to residential housing. Rationally, high rental values for residential properties of high quality can only be considered by the tenants as proper.

5. CONFLICT OF INTEREST

There is no conflict of interest associated with this work.

REFERENCES

Black, S. (1999). Do Better Schools Matter? Parental Valuation of Elementary Education. *Quarterly Journal of Economics*, 144, pp.577-599.

Aina, O.C. and Somefun, A.O. (2007). The Effects of Facilities Provision on Rental Values of Residential Properties in Ikeja, Lagos State. *Journal of Land use and Development Studies*, 3(1), pp. 60-67.

Goodman A.C. (1978). Hedonic Prices, Price indices and Housing markets. *Journal of Urban Economics,* 5, pp.471-484.

Gupta, S.P. (2001) *Statistical Methods*, Delhi: Sultan Chand and Sons publishers.

Lawrence, A. (1962). *Modern Methods of Valuation of land, Houses and Building.* London: Estate Gazette Ltd.

Mallo, D.M. and Anigbogu, N.A. (2009). *Housing Quality between Residential Neighbourhoods in Jos, Nigeria.* Unpublished.

Megbolugbe, I.F. (1986). Econometric Analysis of Housing Traits Price in a Third World City. *Journal of Regional Science*, 26(3), pp. 533-547.

Megbolugbe, I. F. (1991) Estimation Errors of Measuring Housing Quality from Tax Records. *Journals of Economics and Social Management*, 17, pp. 101 – 114

Olujimi, J.A.B. and Bello, M.O. (2009). Effects of Infrastructural Facilities on the Rental Values of Residential Property. *Journal of Social Sciences,* 5, pp. 332-341.

Onokerhoraye, A.G. (1976). The Pattern of Housing, Benin, Nigeria. *Ekitics*, 41(242), pp. 55-59