HOUSING QUALITY IN SUBURBAN AREAS (An Empirical Study of Oba–Ile, Nigeria)

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ABSTRACT

This paper discusses the housing quality in a city suburb, Oba–lle, which is a few kilometers from Akure, the capital city of Ondo State Nigeria. It reports finding from a research on housing studies in the study area. A linear model was developed through multiple regression analysis for the prediction of housing quality of the buildings therein. Three independent variables were found to be predictors of the dependent or criterion variable; these were *Use of Toilet, Age of Buildings,* and *Frequency of Collection of Refuse*. The regression coefficients of the predictor variables described the values by which the dependent variable (Housing quality) would change as a result of a unit change in any of the predictor variables. The model is thus pivotal in determining strategies for the improvement of housing quality in the study area.

Keywords: correlates, housing, model, suburban, quality.

INTRODUCTION

Housing quality is a matter of great concern, especially in Less Developed Countries (LDCs). The magnitude of the housing needs of the populace in these countries rises phenomenally by the day. This is on account of rapid growth and urbanization occurring there, and the lack of a commensurate increase in housing stock (Payne, 1977; Lewin, 1981).

Needleman (1964) defines housing needs as " the number of conventional dwellings that need to be constructed or repaired, in order to bring housing conditions of a particular point of time, to notionally adopted standards". These have many dimensions. As asserted by Awotona (1982) housing needs encompass among other things the total number of dwelling units required, their distribution among the various socio–economic groups and the quality and adequacy of the dwellings and their environment.

The magnitude of housing needs in Nigeria is manifested in the number of households residing in substandard housing units (Olotuah, 2005). This is a highly visible phenomenon in the urban areas where there are acute housing shortages and poor quality of existing housing stock. As Odongo (1979) asserts, housing shortages have become an enduring feature of the urbanizing process in the Third World. Factors that limit the number of housing units include high cost of land, insufficient funds, improper distribution of funds and improper management (Massoudi, and Simonian, 1978). In most LDCs there are varied differential abilities to pay for housing which result in lower–income households occupying cheaper, smaller lower–quality dwellings closer to the city centre and major centres of employment. Higher–income households occupy larger, higher–quality dwellings, which have better facilities and public services but that are in short supply (Walker, 1981). Thus, owing to rapid population growth, low economic capacity of most urban households, inadequacy of public resources, and a general increase in the cost of building acute housing and environmental conditions abound in urban centres in Nigeria. The deplorable quality of housing in Nigeria is reflected in the predominance of structurally unsound and substandard houses in the urban areas as well as the rural areas (Mabogunje, 1975; Onokerhoraye, 1976; Olotuah, 2003; Olotuah and Adesiji, 2005).

This paper examines the quality of housing in the suburbs of Akure, the capital city of Ondo State. The study area of the research reported in this article is Oba–lle, located within ten minutes traveling time from the centre of the capital city. A linear model is developed from the analysis of the research data, which enables the prediction of the housing quality of buildings in the study area. Housing quality is thus the dependent or criterion variables in the model, the occurrence of which is explained by multiplex factors (predictor variables). The model is stated as

$$Y = a + \beta_1 X_1 + \beta_2 + X_2 + \beta_3 X_3 + \ldots + \beta_n Xn + .. e,$$

Y is the dependent variable (Housing Quality), a is a constant (the intercept of hyper plane).
X_1 are the particular variables,
β_1 are their regression coefficient, and e is the stochastic error term.

AIM AND OBJECTIVES OF THE STUDY

The aim of the study was the development of a methodological framework for evaluating housing

adequacy in the study area. Its specific objectives were:

(i) The examination of the qualitative adequacy of the housing stock in the study area;
(ii) The examination of the socio–economic variables that impinge on housing quality;
(iii) The examination of the physical characteristics of the building; and
(iv) The appraisal of the provision and performance of public infrastructure and social services provided on community basis.

RESEARCH METHODOLOGY

The instrument of research used for data gathering was a questionnaire designed to elicit response on pertinent issues of the research variables, which measured the factors of the research. The variables were specified and operationally defined. They were subjected to investigation in a field survey and the observed outcome of the variables constituted the data for the research.

A data matrix of 30 variables by 260 cases was adopted for the research. The stratified random sampling technique was adopted for the administration of the questionnaires. The study area was subdivided into five zones. The sampling frame was divided into the zones ensuring that it was adequately representative of the population of the research. A questionnaire only was administered in a building with the household head chosen as the respondent. In instances where the respondents were not literate in English Language, the questionnaire was translated into Yoruba, the local language spoken in the study area. The questionnaires were retrieved immediately after completion and collated for analysis.

The research data were subjected to analysis in three tiers. The univariate analysis (single factor) carried out enabled the determination of descriptive summary measures for the variables under investigation. It also includes the frequency distribution analysis of each variable. The impact of the variables on each other, considered pair wise, was investigated by the use of chi-square tests of independence. The tests include the Pearson chi–square, linear–by–linear relationships and the likelihood ratio. The characterization of the relationships between the variables and their predictive ability of the quality of housing in the study area was explored through multiple regression analysis. The analysis was carried out with the SPSS (Statistical Package for Social Sciences) Version – 10-computer program.

RESEARCH FINDINGS

The research data show that 20% of the buildings in the study area was constructed over thirty years ago. Thirty–five percent (35%) of the buildings were however built between eleven and twenty years of the time of the survey (Table 1).

Table 1. Age of Buildings

Age	%
1 - 10	25.8
11 – 20	35.4
21 – 30	18.8
31 – 50	13.8
Above 50	6.2
Total	100.00

Source: Author's fieldwork, 2002

Fifty three percent (53%) of the buildings were rooming houses, with two rows of rooms, which face one another with a corridor between them. Single–family bungalows constitute 22% of the housing stock in the study area while storied apartment buildings were 10% of the existing stock (Table 2).

Table 2. House Type

Type	%
Single family bungalow (1 flat)	22.3
Semi–detached bungalow (2flats)	13.0
Rooming house (face–to–face rooms)	53.1
Storied apartment building	10.4
Duplex	1.2
Total	100

Source: Author's fieldwork, 2002

The data indicate that only 15% of the buildings were sound and therefore did not need immediate repairs to make them habitable. Eighty percent (80%) of the existing stock required some forms of repair or the other. Some of these required major repairs to be habitable, and they were unfit for dignified living. Dilapidated buildings in the study area that required complete redevelopment were 42.2% of the existing stock (Table 3). These were buildings with cracked and falling walls, and in some cases differential settlement of foundations had occurred in them.

Table 3. State of Repair of Buildings

	%
Dilapidated	4.2
Requires major repairs	23.5
Requires minor repairs	57.3
Sound	15.0
Total	100.00

Source: Author's fieldwork, 2002

The major sources of water in the study area were hand–dug wells found in 58% of the buildings.

Water from the public mains hardly ran in the buildings. This was available to less than one percent of them. Water from public taps situated along the streets was however available to another 3.5% of the buildings. Boreholes, which were sunk by the state government provided water for 23% of the population (Table 4).

Table 4. Source of Water

	%
None	3.5
Well	58.0
Tanker service	11.5
Borehole	22.7
Public tap Outside	3.5
Tap Water inside	0.8
Total	100.00

Source: Author's fieldwork, 2002

Toilet facilities were not provided at all in 18.5% of the buildings. Pit latrines featured in 39.2%, while closets (WCs) were available in 42.3% of the buildings (Table 5).

Table 5. Types of Toilets

	%
None	18.5
Pit Latrine	39.2
Water Closet	42.3
Total	100.00

Source: Author's fieldwork, 2002

Refuse dumps littered the environment in the study area. Forty percent (40%) of the population disposed their refuse into the dumps, which were an eyesore there. Fifty percent (50%) of the respondents burnt theirs on individual plots, thereby polluting of the air. Twenty percent (20%) of them were rather uncertain about the frequency of the collection of their refuse, while 40% claimed they did so once or more times a week.

The perception of the residents on the quality of their housing shows that 10% considered this as poor. Thirty three percent (33%) of the residents asserted that the quality of their housing was fair. Forty nine percent (49%) of the residents considered their housing as either good or very good, while another 8% rated this as excellent (Table 6).

In the multiple regression analysis carried out on the research data, twelve independent variables were entered on forced entry, regressed against *housing quality* as the dependent variable. The coefficient of determination (R^2) of the resultant model was 0.729, signifying that all the independent variables (collectively) explained 72.9% of the residual variation in the dependent variable. The variance ratio (F-value) was significant as shown by the analysis of variance (ANOVA) (Table 7). The independent variables are specified on Table 8.

Table 6. Residents' Perception of Housing Quality

	%
Poor	10.0
Fair	32.7
Good	32.7
Very good	15.5
Excellent	8.1
Total	100.00

Source: Author's fieldwork, 2002

Table 7. Analysis of Variance (forced entry)

Model	Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
Regression	87.250	12	7.271	8.225	0.000
Residual	218.350	24	0.884		
Total	305.600	259			

Source: Author's fieldwork, 2002

Table 8. Specification of Variables

S/N	Variable Number	Variable Name	Variable Code
1	V18	Housing Quality (Dependent Variable)	QLTY
2	V5	Household Number in Building	HHNO
3	V6	Number of Bedrooms	BDRM
4	V7	Household Size	HHSZ
5	V8	Age of Building	AGE
6	V11	Source of Water Supply	WATR
7	V13	Regularity of Electricity Supply	ELEC
8	V14	Type of Toilet	TLET
9	V15	Use of Toilet	TOL
10	V16	Type of Kitchen	KITCH
11	V17	Use of Kitchen	USKT
12	V21	Mode of Refuse Collection	MODE
13	V22	Frequency of Collection of Refuse	FRWA

Source: Author's fieldwork, 2002

The regression analysis however showed distinctly that only three of the twelve independent variables significantly explained the residual variation in housing quality at 95% confidence level, which is the critical level adopted for the research.

These are the predictor variables for housing quality, and are:

(i) V8, Age of building:
(ii) V15, Use of Toilet; and
(iii) V22, Frequency of Collection of Refuse

Step–wise algorithm was carried out on the data. The nine other independent variables were excluded from the model. The three variables were entered into

the model one after the other according to their ability in predicting the dependent variable. The ability is measured by their Beta values (standardized coefficient); the higher it is the greater is the contribution of the independent variable in the prediction of the dependent variable. Collectively, the predictor variables explained 68% of the residual variation in *Housing Quality*. The least–square algorithm applied to the model

$$Y = \beta_o + \beta_1 V15 + \beta_2 V8 + \beta_3 V22 + E$$

Where Y- dependent variable,
β_o - Coefficient of the constant
β_1, β_3, β_3 -Regression coefficients of the predictor variables,
E- Error component in the model,
V15, V8, V22 -predictor variables)
gives the estimated equation of the model
$Y = 0.954 + 0.524\ TOL + 0.182\ AGE + 0.188\ FRWA$

This linear model, which is the equation of best regression, is the equation for predicting the dependent variable, *Housing Quality*, given quantitative values for the predictor variables.

POLICY IMPLICATIONS AND RECOMMENDATIONS

Frequency Of Collection Of Refuse is a predictor variable for *Housing Quality* in the study area from the multiple regression analysis of the research data. The unstandardized regression coefficient of the predictor variable is 0.188 which indicates that a hundred percent change in it will exert 18.8% change in the dependent variable, holding the effect of the other variables in the model constant. Thus, quality of housing in the study area will improve significantly with an increase in the frequency of the collection of waste. In the same vein a hundred percent change in the *Use of Toilet* will exert 52.4% change in housing quality in the same direction, controlling for the effect of the other predictor variables in the model. This predictor variable (*Use of Toilet*) has the highest standardized regression coefficient (Beta) and thus contributes the most to the model. It is thus the most important variable in the prediction of the dependent variable (*Housing Quality*).

The provision of sanitary facilities in the study area is deplorable. It is imperative that the organ of government responsible for ensuring healthy environment, as well as that responsible for maintaining building standards (Ministry of Health, and Ministry of Lands and Housing) should brace up to the responsibility of ensuring adequate toilet facilities, proper location or siting of wells, septic tanks and soak away pits.

The State Waste Management Board needs to extend its services to the study area much more assiduously. Depots (collection points) should be established where the residents should dump their refuse for onward collection by the refuse collection vans. This is preferable to the house–to–house collection method since many buildings may not be accessible to the collection vans.

The intervention of the public sector especially with regard to the provision of housing finance is expedient in improving the generally poor conditions of the buildings in the study area. Access to housing finance is vital in rehabilitating, renovating, and redevelopment of existing housing stock in the study area. A major bottleneck that militates against easy access to housing finance is non-accessibility to land titles especially Certificate of Occupancy. This is within the purview of the state government to tackle. The buildings for which the loans are sought should serve as collateral for the loans. Housing quality in the study area will appreciate considerably if government ensures ready access to housing finance.

CONCLUSION

This paper discusses the quality of housing in a city suburb, Oba–lle, and develops a predictive linear model for it. The model establishes a relationship between housing quality and three predictor variables that significantly influence it. These are *Age of the Buildings* (*AGE)*, *Use of Toilet* (*TOL*), and *frequency of collection of refuse (FRWA)*.

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