Factors Influencing the Pattern of Residential Property Values in the Zaria Urban Area, Nigeria

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Abstract

The study tried to analyse factors that influence the pattern of residential property values in urban Zaria, Nigeria. Data were collected using interviews and questionnaire survey - administered on occupiers of residential properties and estate agents/dealers within the study area. A total of 257 copies of questionnaire were used for the exercise. Multiple regression analysis was employed to analyse the data collected. The results show that the key factors influencing residential property values were: neighbourhood quality (524.12), cosmopolitanism/ethnic composition (466.81) and proximity to institutions of higher learning (387.38). Thus, the null hypothesis put forward that ''There is no significant relationship between residential property values and the explanatory variables'' was rejected. Meaning that there is indeed a significant relationship between residential property values and the explanatory variables, especially neighbourhood quality, cosmopolitanism/ethnic composition and proximity to institutions of higher learning. It was recommended that to enhance environmental quality, infrastructural facilities, such as good roads and pipe-borne water should be made available by the State Government in all nooks and corners of the area and there should be periodic maintenance; government can recoup back its resources by collecting taxes based on the land value of different areas. Investors in real property business should key in by wisely acquiring properties around areas that would ensure sustainable returns on investment.

Key words: Factors, Residential, Property values, Zaria

Introduction

The influx of people into urban areas of developing countries is continuously on the rise. Consequently, Africa's urban population is expected to grow from 294 million in year 2000 to 742 million people in 2030, an increase of 152% (UN-HABITAT & Urban Land Mark, 2010). Nigeria being the most populous nation on the continent would contribute a significant proportion of this. The urban population growth in Africa is mainly determined by two major factors: the migration of mostly young people from rural to urban areas, and a high natural rate of population growth due to high fertility and low mortality rates as well as low median ages. This therefore, affects the need for land for the provision of housing and other services (Ai, 2005). Little wonder that ERSO (2008) has estimated that residential home ownership in Nigeria is less than 25%, compared with the international benchmarks of 75%. It therefore concluded that housing issues would remain one of the primary social focus in the country for next 20 years or more.

Various studies have identified myriad of factors affecting land value. For instance, because of certain social or economic considerations people tend to flock together in terms of residential location i.e. somehow in line with the adage that ''birds of the same feather flock together''. A study by Rikko and Dung-Gwom (2006) in the city of Jos, Nigeria noted that the factors responsible for the high land value in Rayfield include the elite status of the area, due to the presence of medium and high income earners as well as retired senior military officers, as well as good security due to the presence of the government house in the area. There was a similar finding by Kabba and Li (2011) where the western part of Freetown, Sierra Leone, recorded higher land values because most of the residents belong to the elite and decision making class, while the east had lower values, because it was predominantly occupied by middle and lower class category of people.

The effects of infrastructure provision and land use on land value have been the concern of some studies. The work by Adebayo (2006) is one of them, essentially on the effect of urban infrastructure on property values in Lagos. Data collected through a questionnaire survey was analysed using descriptive statistics. Results of the study revealed that the presence of essential infrastructural facilities and services was a major determinant of property value, and that property values tend to peak in those areas that enjoy easy accessibility (through road network), electricity, pipe-borne water and efficient drainage. Sada (1968) had earlier noted that the supply of different services in Lagos, the former capital of Nigeria, was bound to make the city to be differentiated along many socially related lines with concomitant effects on property values. Kabba and Li (2011) have also confirmed the importance of infrastructure and services in influencing land value in Freetown, Sierra Leone. Likewise, Amenyah (2013) has noted the role of amenities in determining rental values in Accra, Ghana. Stable power supply from NESCO was one of the factors that help to explain land value variation in Jos, as explained by Rikko and Dung-Gwom (2006). Conversely, Oyebanji (2003) in a study has stated that good spread of road network has a tendency to increase accessibility with certain areas becoming less accessible as a result of traffic congestion, thereby causing value to shift to areas that are accessible.

Zaria is the second largest urban center in Kaduna State, next only to Kaduna town which is the state capital. Probably for its population size, the area was split into two Local Government Areas (LGAs) of Zaria and Sabon Gari in 1991. For long, the town has been attracting people due to the ever increasing volume and variety of socio-economic activities located at spatially differentiated parts or points. These activities range from the several institutions of higher learning, a number of commercial banks, telecommunication service providers, retail outlets etc., all of which have attracted consumers and providers of ancillary services. These, in a way, increased the demand, not only for residential property, but also for commercial properties in the area and its attendant effects on land values. According to Adams (1994), price for land or property is either the amount sought (asking price) or the sum received (price paid); while the value of land or property are price estimates that reflect subjective expectations and perception of worth. In an efficient market, the value is likely to correspond to price. In this study, therefore, property value is seen as the perceptions of worth of a rental apartment. In other words, property value in this study is taken to be the estimated tenement rates paid by the occupiers of a built-up property. Several studies in Nigeria have tried to analyse the various factors that influence residential property values but none has considered the influence of

variables like major commercial centres and institutions of higher learning. This study tries to analyse these factors in addition to several others found in the literature, which could influence residential property value in the area. The hypothesis formulated is thus: There is no significant relationship between residential property value and the following explanatory variables: distance from the CBD, distance from sub-centres, neighbourhood quality, population density, proximity to the campuses of high institutions, availability of infrastructural facilities, land use type, topography, road quality, development potential and ethnic composition. Therefore, the aim of the study is to analyse the factors that influence the pattern of residential property values in urban Zaria, Nigeria.

The Study Area
Zaria is located on the central plain of northern Nigeria, about 950km from the sea, approximately between Latitudes 11o 00' - 11o 10' North of the Equator and Longitudes 7o 36' - 7o 45'East of the Greenwich Meridian (Figure 1). It is the second largest town in Kaduna State, after Kaduna, the state capital. Zaria town is made up of Zaria and Sabon Gari local government areas (LGAs). They form the study area, with the Kubanni river as the boundary that separates the two LGAs. The Headquarters of Zaria LGA is located in Zaria city, near the Emir's palace, while that of Sabon Gari is located at Dogarawa.

Zaria, being in the heart of the Hausaland is predominantly occupied by the Hausa speaking people, traditionally known as Zage-zagi or Zazzagawa, who largely occupy the old walled city. Outside the city wall are other Hausa elements, who originally migrated into Zaria from the northern states. These are especially found in Tudun wada. The non-Hausa in-migrants to the area are predominantly found in areas like Sabon Gari, Palladan and Samaru. According to the 2006 population census, the two LGAs that make up the Zaria urban area have a combined population of 698,348 (with S/Gari having 291,358 and Zaria 406,990) (NPC, 2009). And according to Buttler (2015), Zaria is among the top ten most populous urban areas in Nigeria. Indeed it has been ranked 8th, and is the only non-state capital amongst the top ten.

The growth of urban Zaria, though influenced by historic circumstance and political authority it wielded prior to the 19th century, is also the result of deliberate establishment of educational institutions (Bello, 2000). Hence, it has been noted that twelve out of the seventeen tertiary institutions in Kaduna State are located in Zaria, while there are about fourteen manufacturing industries and major commercial establishments. As a result of this and many other developments in the area, Bello (2000) has found that between 1962 and 1992, Zaria as an urban centre has been transformed from an educational centre to a rapidly growing manufacturing industrial city sprawling for more than 25km stretch along Kaduna-Sokoto high way.

In terms of landforms, Zaria is situated on the vast gently undulating plains that extend across much of northern Nigeria (Thorp, 1970). A closer field examination, however, shows considerable variations in both surface and composition. The plain which is generally undulating varies in altitude from about 550m to 740m above sea level is and punctuated by hill features of two kinds, namely, rock inselbergs, such as the Kufena hill, attaining a height of 820m and lateritic ironstone capped residuals (Iguisi, 1996). Based on climate, Zaria lies within a region which has the tropical continental climate (*Aw*), with distinct wet and dry seasons, the wet season occurring in the high-sun period. The rainfall is seasonal in character and about 90% of it falls between April and October, with the heaviest recorded in July and August.
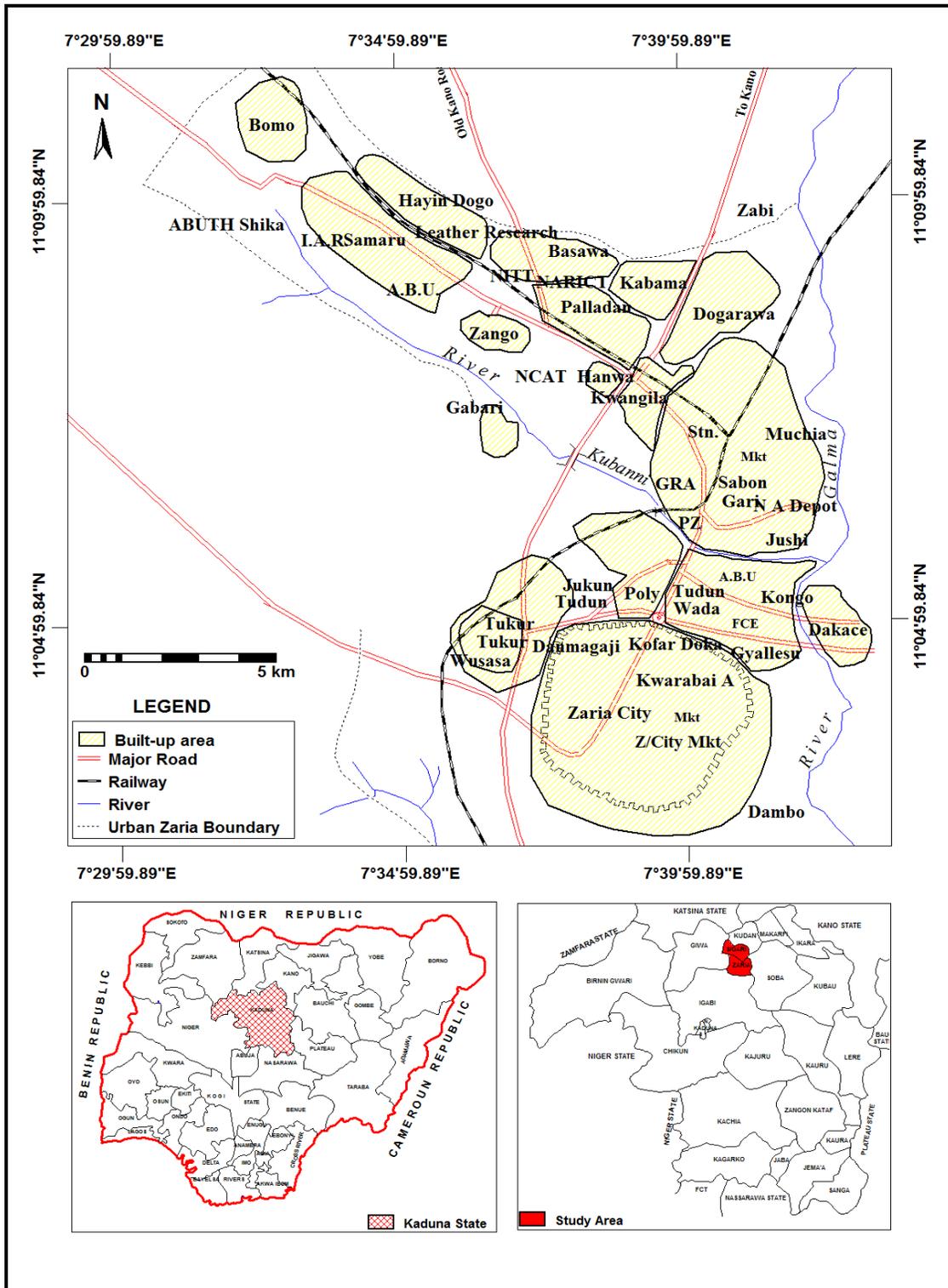
Fig. 1: The Study Area – Urban Zaria
Source: Adapted and Modified From Topographic Map of Zaria Sheet 102 S.W

Materials and Methods

The types of data collected include: amounts paid as rental charges for residential properties across the study area, and data on the factors determining property values. These were collected through both primary and secondary sources. A total of257copies of questionnaire (168 for occupiers of residential properties and 89 for estate dealers/agents) were utilised. Systematic sampling method was used to select the specific property for questionnaire administration. The procedure involved selecting the first property on the street and then every fifth residential properties as they flanked both sides of the sampling transects. To select estate dealers/agents, the snowball sampling technique was adopted. It involved contacting a well-known estate agent and interviewing him/her after which he/she was asked to introduce the researcher to an equally well-established person in the same business. The method is often used to obtain a sample when there is no adequate list which could be used as a sampling frame (Osuala, 2005). The method was adopted because of the difficulty in identifying this category of respondents. Therefore, once one was identified and agreed to be interviewed, the request was made for links with others until a total of 89 estate dealers/agents were found and interviewed.

In this study, the dependent variable (in our multiple regression analysis) is property value, which is the rental charge per metre square per annum (for residential properties). Data on these were obtained from different sources, which included questionnaire administered on tenants in residential properties located along the sampling transects, where information on the amount paid per annum were collected. Information from rent collection agencies was used to validate questionnaire responses. For the independent variables, many factors that affect property value were determined and information on them was collected. Such factors were identified from the literature on the subject matter, discussions with estate dealers/agents/valuers, rent collection agencies, building professionals as well as the researchers' local knowledge of the study area.

One of the major land uses, especially in urban areas, is residential. In order to test the null hypothesis, that ''There is no significant relationship between residential property value and explanatory variables'', Multiple Regression Analysis was employed. In the multiple regression model adopted here, residential property value (RPv) is the dependent variable, while several explanatory variables were considered. The variables are represented in a model thus: residential property value = Y (RPv), distance from CBD = Dist CBD, distance from sub-centre = DistSc, proximity to higher institutions of learning = Prox HI, land use = L Use, population density = Pop, neighbourhood quality = Ne Qual, water supply = Water s, quality of road = Road Q, ethnic composition =Ethn Com, topography= Topo, development potential = Devt Pot. and Season = season.
   . The multiple regression model used is in form of:

   $Y = a + b_1x_1 + b_2x_2 + b_3x_3 + \ldots\ldots + b_nx_n + e$…………………………………………….eqn 1
   Where,
   Y = dependent variable (residential)
   a = constant
   $x_1, x_2, x_3\ldots\ldots, x_n$ are independent variables (distance from the CBD, distance from sub-centres, neighbourhood quality, population density, proximity to the campuses of high institutions, availability of infrastructural facilities, land use type, topography, road quality, development potential and ethnic composition)

$b_1, b_2, b_3 \ldots\ldots b_n$ are the regression coefficients which determine the contribution of the independent variables

e = residual or stochastic error (which reveals the strength of $b_1x_1\ldots b_nx_n$. If e is low the amount of unexplained factors will be low and vice versa.

Using the factors mentioned above, the functions analysed using the above regression model are:

$PV(RPv) = f (Dist\_CBD, Dist\_SC, Prox\_HI, L\_Use, Neb\_Q, Pop\_D, Topog, Infras, Ethn\_Co, Road\_Qu, Devt\_po)\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots eqn 2$

Where:

PV = the value of rent (residential), charged per square metre

Dist CBD = the distance from CBD

Dist SC = the distance from Sub-centres

Prox HI = the proximity to higher institutions of learning

L Use = the Land Use

Neb Q = neighbourhood quality

Pop D = population density

Topog = topography

Infras = infrastructure

Ethn Co = ethnic composition

Road Q = road quality

Devtpo = development potential of an area

Based on the above, our multiple regression equation now takes the following form:

$Y(RPv) = a + b_1Dist\ CBD + b_2Dist\ SC + b_3Prox\ HI + b_4L\ Use + b_5Neb\ Q + b_6Pop\ D + b_7Topog + b_8Infras + b_9Ethn\ Co + b_{10}Road\ Qu + b_{11}Devtpo\ldots\ldots\ldots\ldots\ldots\ldots\ldots eqn 3$

Where, a is the regression constant and b_1 to b_{11} are the value rating for the independent variables.

Results and Discussion

The issue at stake is to analyse the factors that influence the pattern of residential property value in urban Zaria. Several factors that affect property values were identified as earlier noted, and eleven of them were shortlisted. The variables were represented in a model (see eqn.2 above). Results of the multiple linear regression model are presented in Table 1. It shows the estimated coefficients of the variables that would be fitted into the multiple linear regression model to describe the relationship between residential property values and the explanatory variables or factors. The model to highlight the result of the fitting is presented in the following equation:

$Y(RPv) = 1946.64 + 68.66Dist\ CBD + 4.68Dist\ SC + 387.38Prox\ HI - 50.51L\ Use + 0.23Pop\ D + 524.12Neb\ Q + 254.44Water\ S + 54.20Road\ Q + 466.81Ethn\ Co - 226.36Topo - 660.44Devt\ pot \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots eqn 4$

This equation also shows that there are positive relationships between residential property value and the explanatory variables, excepting the following: land use, topography and development potential. Therefore, the null hypothesis is rejected. This result implies that as neighbourhood quality increases (with a value of 524.12) residential property value tended to

increase. In addition, it shows that the more cosmopolitan an area (with a value of 466.81), the higher its residential property values. Also residential property values increased as we move towards the higher institutions of learning in the town (with a value of 387.38). Other factors that have shown the tendency to attract high residential property values include low population density, quality of road, nearness to CBD and sub-centre as well as water supply. Those that show negative effect on residential property value include: low rate of development in an area, undulating topography, and land use.

Table 1: Results of Regression Analysis for Residential Property Value

Explanatory variables/factors	Unstandardised coefficients		Standardised coefficients		
	B	Standard Error	Beta	*T*	*P* Value
1 (Constant)	1946.638	405.338		4.803	.000
Dist CBD	68.662	72.521	.086	.947	.346
Dist Sc	4.676	132.638	.003	.035	.972
Prox HI	387.376	137.957	.235	2.808	.006
L Use	- 50.510	45.736	.183	-1.104	.272
Pop	0.234	239.791	.151	1.947	.054
Ne Qual	524.124	383.072	.101	1.368	.174
Water S	254.435	100.697	.386	2.527	.013
Road Q	54.203	202.115	.021	.268	.789
Ethn com	466.809	.115	.157	2.032	.045
Topo	-226.358	52.111	-.365	-4.344	.000
Devt pot	-660.443	96.854	-.595	-6.819	.000

Source: Fieldwork, 2016

The high score for neighbourhood quality in the analysis may not be unconnected with the fact that areas that have good lay-outs and high quality housing like the GRA and Hanwa New Extension, have tended to attract the well-to-do in the society, big time politicians and government functionaries, including high-ranking armed forces personnel. This is in line with the finding by Rikko and Dung-Gwom (2006) in the city of Jos and Kabba and Li (2011) where the western part of Freetown, Sierra Leone, recorded higher land values because most of the residents belong to the elite and decision making class. For the high values around higher institutions of learning, this may not be unconnected with the increased demand for accommodation by both staff and students of such campuses. The fact of a cosmopolitan ethnic composition as attracting high residential property value could be because of the fact that such

areas tend to give the urban centre a truer colour of urbanity, with a good number of neighbours from different ethno-religious background, willing to pay for residential accommodation.

Again, relatively low population density has tended to attract high values, as the serenity of such areas confers on it some advantages, especially in the eyes of people in the upper social class. Also the advantages associated with accessibility make good quality roads attractive and consequently higher residential property value. The CBD and sub-centres comes to mind in this regard. Although they might not be too influential as far as our analysis is concerned, yet they contribute to raising the value of residential apartments around them. However, the noise around, as well as the hassles and bustles of economic activities and traffic do not encourage high-class residential settlement.

Furthermore and still from Table 1, the p-values for proximity to higher institutions of learning, water supply and ethnic composition were less than 0.05, meaning that there are statistically significant relationships between residential property values and the five variables at 95% confidence level.

In addition, the analysis shows that the p value is 0.001, which is less than 0.05. This means that the null hypothesis is rejected, implying that there is a significant relationship between residential property value and the variables analysed. The R^2 is 71.8%, while the adjusted R^2, which is a more appropriate measure for a correlation estimate that accounts for the presence of multiple independent variables, was also determined. The adjusted R^2 obtained is 0.669, indicating that the regression model is highly significant, as it has explained about 66% of the land value variation in the study area.

Conclusion
The study has confirmed that the major factors influencing residential property values in urban Zaria included neighbourhood quality, cosmopolitanism/ethnic composition and proximity to institutions of higher learning. Therefore, areas that enjoyed good environmental quality, such as GRA and Hanwa New Extension, attracted higher values. Likewise, areas that were more cosmopolitan, like S/Gari had higher values than areas dominated by natives of the area. Again, areas adjacent to institutions of higher learning, for instance Samaru and Kongo areas, also had high property values. It was recommended that to enhance environmental quality, infrastructural facilities, such as good roads and pipe-borne water should be made available by the State Government in all nooks and corners of the area and there should be periodic maintenance; government can recoup back its resources by collecting taxes based on the land value of different areas. Investors in real property business should key in by wisely acquiring properties around areas that would ensure sustainable returns on investment.

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