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Editorial

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SCOPE

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- The articles(s) should follow the formats: The Title page, Abstracts, Introduction, Materials and Methods, Results, Discussions, Conclusion, Acknowledgment, References and Appendix.
- A CD of the article in Ms-Word is also required.

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Correspondence Address

The Managing Editor
Journal of Geography, Environment and Planning (JOGEP)
C/O Department of Geography and Planning Science
University of Ado-EKiti, Ado-Ekiti, Nigeria
P.M.B. 5363, Ado-Ekiti, Nigeria
Email:jogepunad@yahoo.com

Dr. Ogundele J.A.
C/O Department of Geography and Planning Science
University of Ado-EKiti, Ado-Ekiti, Nigeria,
P.M.B. 5363, Ado-Ekiti, Nigeria
Email:joeogundele@yahoo.com

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ASSESSMENT OF THE RELATIONSHIP BETWEEN HOUSING DENSITY AND PROPERTY VALUE IN MINNA, NIGERIA

Adama, U.J.

Abstract

The research assessed the relationship that exists between housing density and property value. Primary and secondary data were collected and analysed. Using multiple regression analysis, the dependent variable is the average property value while the independent variables are the determinants of housing density which include building plot coverage ratio, the number of room in a building, the number of people in a house and the building space. The analysis revealed that F-calculated value was 5.977 while the F_{tab} at 0.05 degree of confidence is 2.60. This shows that there is a statistically significant relationship between housing density and property value in Minna.

Keywords: housing density, low density, medium density, high density

Introduction

Density of houses in terms of low, medium and high area is very paramount among the neighbourhood characteristics because households choose their residential locations on the bases of the density attractiveness to them. Olatunji (2008), opined that affluent families prefers low density quarters while the poor are disposed to high density zones, the middle income is found in areas that possess features that are midway between the two.

Israel (2005) posited that, population and housing density, and the relationships between open and built-up areas, have a tremendous impact on urban environmental quality. Many authors have also found relationship between neighbourhood quality and property value, and they opined that high density can be detrimental to urban environmental quality and thus to economic attractiveness. Fan (2009), said the quality of housing environment is an increasingly important research objective in the demand-side consideration. This situation may not be the same every where and in all cases. Hence the interest of the researcher to examine the relationship in Minna in order to isolate the relative contribution of housing density to property value. The research seeks to find out the various housing densities in Minna and if there is any relationship among housing densities and property value?

Hypothesis

This research is based on the following hypothesis:

H_0 – There is no statistically significant relationship between housing density and property value in Minna.

H_1 – There is statistically significant relationship between housing density and property values in Minna.

Scope And Limitation Of Study

The scope of this research is focused on issues of housing density and residential property value. The study is focused on residential properties only and restricted to Minna township . Adama (2011) adopted Baba and Jinadu (2000), zoning of Minna town into twelve areas namely Bosso I, BossoII, GRA, F-Layout, Minna East central, Minna West central, Tunga I Tunga II, Minna South West peripheral, Minna North West peripheral, Maitumbi, and 123 Quarters/Oduoye Estate these zones were further classified as high density area, medium density area and low density areas respectively (see Table 1). The study covered only six of the twelve zones as shown in Table 2. Data on the trend in residential property value in each of the zones were collected and analysed.

Table 1. A Breakdown of Minna into neighbourhoods and densities with the population of properties in parentheses

Low density	Medium density	High density
GRA (1134)	Bosso II (2652)	Bosso I (4908)
	F- Layout (2808)	Minna West peripheral (5953)
	123 Quarters (3025)	Minna East Central (6719)
	Tunga I (3325)	Minna North West peripheral (6805)
	Tunga II (3998)	Minna South west peripheral (7801)
		Maitumbi (10974)

Source: Author's analysis 2009

Table 2. Selected Sample for the study

Low density	Medium density	High density
GRA	Bosso II	Bosso I
	Tunga II	Minna North West.Peripheral
		Maitumbi

Source: Author's analysis 2009

Brief Description Of Minna Town

Niger state is one of the thirty six states (36) in Nigeria as shown in Figure 1. Minna the state capital as shown in (Figure 2) is located between Latitude 8°20'N and Longitude 6^0 33'N. Minna town is almost a linear settlement with a major road running through it. There is also the East and West bye passes circumferencing Minna as a result of growth in recent time.

The neighbourhoods of Minna include Minna central, Kpakungu, Barkin Sale, Sauka-ka-huta, Bosso, Chanchaga, Tudun Fulani etc.Within these neighbourhoods are wards, and they include Limawa A, Limawa B, Nasarawa A, Nasarawa B, Nasarawa C, Sabon Gari, Jikpan, Tundun Wada North.

The residential land use of Minna, takes the total coverage of about 584 hectares (54.8%) of the total land mass (Minna Master plan, 1979). The present administration of Dr Babangida Aliyu has added more to the houses at the periphery by the construction of 500 units of houses at the Wushishi housing estate and another 500 units at the Talba housing estate along Bide road with several other proposals. The spatial expansion of Minna is constrained by mountainous ridges particularly at the eastern part. This also have influence on the liner pattern of development

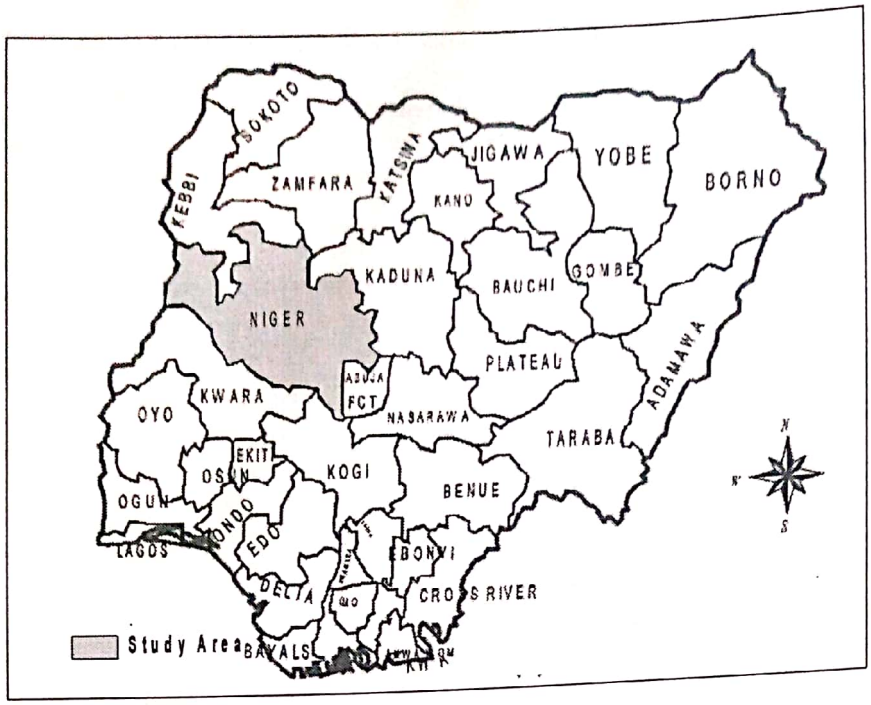

Figure 1: Map of Nigeria showing Niger State

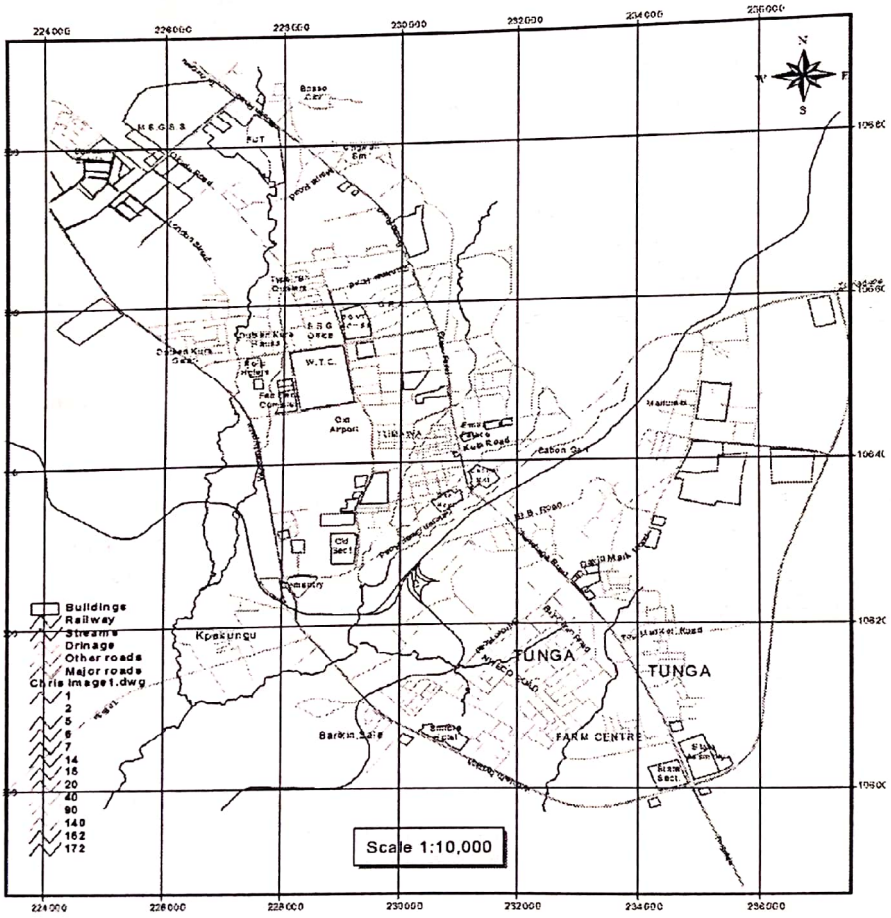

Fig 2 showing Minna township map
Source: Adopted from Niger State Ministry of Lands and Survey and modified 2010

Literature Review

The Concept of Housing Density

Density is a measure of a number of things per unit area. It is often measured in terms of people, houses, or jobs in a given area. Housing density provides an established method of quantifying the intensity of development and is a crude indicator of amenity and environmental quality. However, compatibility of density is only one of many criteria used to assess the suitability of a housing proposal and other factors will often have overriding importance in determining an application.

Assessment of Density

It is the volume and extent of development which is of main concern when assessing housing density. For planning purposes, density assessment will be made on the basis of both the number of dwellings and the number of habitable rooms per hectare. However, the plot ratio (gross floor space to site area) should also be used for more dense urban sites. Jinadu (2007), said density may be expressed as the number of houses, habitable rooms and persons per hectare. Based on this, the author came up with housing density surveys by classifying them as follows:

Gross Density – This is the overall density of an area. It is obtained by dividing the entire land area by the total population

Net Residential Density- it is the measure of the intensity of development of a residential plot. It is expressed as the population of people per unit area or in terms of the accommodation they occupy. The net residential areas include the house plot gardeners, incidental open spaces and half the width of surrounding roads up to a maximum of 6 metres.

Accommodation Density: This is the number of habitable rooms per unit area (e.g. acre or hectare) Habitable rooms include all rooms except bathrooms and water closets, laundry rooms passage or hallways, and kitchens.

Occupancy rates: This is the number of persons per habitable room. Simply expressed as

Occupancy rate = Population Density/Accommodation Density

Floor space index (FSI) or Floor Area Ratio: This is the amount of building floor area per plot. It is obtained by multiplying the length and breadth of structure to get the total floor area and dividing it by the area of site, including half the area of adjourning road.

Plot Ratio: This is the total area occupied by a building in relation to the total plot area.

Housing Density

Housing density can have a positive or negative effect on the neighbourhood and by extension the environment. Most neighbourhoods in urban centres are classified based on housing density into high density, medium density and low density respectively. This major categorization of housing densities is distinct in social and physical patterns. An attempt is made below at showing the distinctions among others.

High Density

This is usually associated with low quality residential areas of our urban centres. This district is located largely in the central parts of pre-colonial Nigeria cities. In other words, they are the residential districts built up in these cities during the pre-colonial period. Although a large proportion of low quality residential areas, in the pre-colonial urban centres are located in the central areas, the situation in the modern or colonial towns is quite different. In these towns, low quality residential areas are often clustered in the suburbs apart from those inhabited by the first groups of immigrants to them which are in most cases located in the central areas. Irrespective of where they are located, low quality residential area or districts in urban centres of Nigeria have similar socio-economic and physical characteristics. The most distinguishing physical feature of these residential districts is that most of them have never been planned. (Onokerhoraye and Omuta, 1986). Consequently, houses have been built without any reference to a street network. However, much of the housing is overcrowded, insanitary and dilapidated. The district is also without adequate vehicular

access, the road reservation between housing is not made and generally impassable to vehicles during the rains.

In some of the modern towns such as Lagos, Kaduna and Minna, a significant proportion of the low quality residential districts are planned with a grid pattern and network of roads. But, in spite of this, the standard of housing construction is low with most of them built of mud and plastered with cement. However, within the low quality residential areas of Nigerian urban centres, there are few high quality houses built by individuals who for one reason or another find it convenient to build their houses in such areas. According to Onokerhoraye and Omuta (1986), the general low standard of the housing in terms of construction layout and facilities available explains the very low rent paid by tenants.

In traditional urban cities, the vast majority of the low quality residential districts are occupied by their owners while in the modern cities most of those who live in the district are tenants. This shows that in the modern cities, the ethnic composition of the inhabitants is more varied as compared to the traditional cities.

Finally, the vast majority of people living in the low quality residential district in most urban areas in the country belong to the low grade social group. Consequently, the socio-economic characteristics of the majority of the inhabitants in low quality residential districts are virtually the same as those of the lower income group in the urban areas.

Medium Density

This is synonymous with the medium grade residential district in the urban areas of Nigeria having the common characteristics of been planned and laid out after the establishment of British Colonial rule in the country. They are therefore a feature of both the slow and rapid growing traditional cities as well as the modern cities (Onokerhoraye and Omuta, 1986). They opined that these districts developed as a result of the need to accommodate a growing number of middle grade income house holds in the urban areas the vast majority of which are employed in the formal sector of the urban economies. In the medium grade residential district, some efforts have been made by town planning authorities to control the layout of streets.

The houses in these district contrast sharply with those in the low grade residential districts discussed above. The walls of most houses are made of cement blocks while a few others are built of baked brick. Although, a few of the houses are built to suit a single family, most of them can accommodate three or four average families. Most of them show a very high percentage of houses with good household amenities. The density of housing per hectare which is generally about 18 to 22 is quite low compared with the situation in low grade districts (Onokerhoraye and Omuta, 1986). Some of the houses have gardens while a fewer still have garages. Many streets present facades of a high standard of urban design. The layout is of mixed residential uses with shopping, warehousing and informal trading kiosks.

The socio economic characteristics of the inhabitants of these districts are also quite different from those of the low because houses are relatively well spaced out while the number of people sharing a dwelling is also quite small. Consequently, population density in most of these districts is less than 100 per hectare. The ethnic composition of the population in the districts is quite mixed especially in the rapidly growing traditional cities and the modern towns which have attracted a large number of immigrants in recent years. Finally, the medium grade residential district are largely inhabited by members of the middle grade income group although there are a significant number of members of the lower and upper income groups and rents are generally higher than the low quality residential area.

Low Density

This is also referred to as high quality residential area. According to Onokerhoraye and Omuta (1986), this district comprises of government residential areas and some recently laid out housing estates. The districts have the common characteristics of being well planned. Most of them are of recent date, and with a few exceptions, have been specially developed by governments or their agencies. The density of housing is quite low and most of the houses stand in the midst of well kept lawns, surrounded by neatly trimmed hedges. Although there

are some blocks of flats, the houses in most high quality residential districts are generally single-family ones.

In the older sections of the government residential areas, housing tends to be largely of the 'colonial' type. The colonial style of building is not peculiar to the urban centres of Nigeria. Their structure and design; although varied on account of different social and climate conditions and from one era to another, may be seen reflected in many parts of the world formally administered by Britain. The houses built in the new sections of the government residential area and other housing estates are quite different in style from the colonial ones. Basically, the facilities available in them are the same as those of the colonial style of building.

The socio-economic characteristics of the inhabitants of this district are distinct from those of the other sectors of the cities. In terms of ethnic composition, they use to be quite heterogeneous and in fact, include few non-Nigerians resident in the cities this trend has completely changed with independence and democracy. Majority of the inhabitants are government functionaries and high ranking politicians and businessmen the population density is very low.

Methodology

The study examines the various housing densities in Minna township to find out if there is any relationship among the housing densities and the value of the properties. Since Minna the study area is basically a rental market, the study examined trends in rental values from 2003 to 2008. Based on the six neighbourhoods selected, a total of 450 questionnaires were administered (75 questionnaires per neighbourhood) and 430 were successfully returned representing 96% success. The establishment of the relationship between housing density and property value was achieved by a multiple regression analysis. The independent variables were the indicator of density in the questionnaire while the depended variable was the average property value

Results

Table 3: Result of Multiple Regression Analysis of Housing density and Property Value

Variables		Type of Model		Observations			
X	Y		Regression Equation	R^2	F	$F_{0.05}$	P_{value}
bldpc; rmnos; pepph; bldspc;	avre	linear	avre = 139936.0 +19663.699bldpc - 14044.2rmnos -14080.0pepph +4109.503bldspc	0.053	5.977	2.60	0.000

Source: Author's analysis, 2010

Discussions/Conclusions

The dependent variable is the average property value while the independent variables are the determinants of housing density which include building plot coverage ratio, the number of room in a building, the number of people in a house and the building space.

The result of the multiple regression equation $Y= a + b_1x_1 + b_2x_2 \ldots\ldots b_nx_n$, revealed that F-calculated value was 5.977 while the F_{tab} at 0.05 degree of confidence is 2.60. This shows that there is a statistically significant relationship between housing density and property value in Minna.

Since the calculated value of (F) 5.977 is greater the table value of (F) 2.60, we therefore reject the null hypothesis .

The implication of the result is that as the density of an area increases, there is a decrease in the value of property in such area. We therefore recommend that our urban planners handle the issue of housing density with a view to encouraging investors to participate in housing provision. This is against the background that dwindling investment fortunes can discourage would be investors.

References

Adama U.J (2011) Evaluating the Relationship among Housing Density, Neighbourhood Quality and Residential Property Value in Minna, Nigeria Being an M.Tech dissertation submitted to the department of Geography, Federal University of Technology Minna.

Baba J.M. and Jinadu A.M. (2000) Analysis of spatial variation in the occurrence of Housing Environment –Related Diseases in Minna Metropolis. Being a research submitted to the university Board of research, Federal University of Technology Minna.

Fan W. (2009) An Analysis of Quality Attributes of Housing Environment in Guangzhou China, Using Expert Judgments. Dept. of Real Estate and Construction, the University of Hong Kong.

Israel K.(2005) Urban Environmental Quality. The Jerusalem Institute for Israel Studies .*The Center for Environmental Policy Studies* Series #12

Jinadu, A.M (2007), Understanding the basics of housing. Jos University Press Ltd

Olatunji.I. (2008) Analysis of Factors influencing the Location Preferences of household in Minna, Being an M.Tech dissertation submitted to the department of Estate Management, Federal University of Technology Minna.

Onokerhoraye, A.G and Omuta G.E.D (1986) *Urban systems and planning.* The Geography and Planning Series of Study Notes, University of Benin Nigeria.