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IMPACT OF NEIGHBOURHOOD QUALITY ON RESIDENTIAL LAND VALUE IN MINNA, NIGER STATE

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Abstract

An ideal neighbourhood is often characterized by availability of electricity, road network, drainage/sewage, health care facilities, educational facilities, telecommunication, pipe borne water, shopping centre, recreation centres and most importantly security. In a neighbourhood where all the features abound, high land value will be attracted. This implies that, the quality of neighbourhood plays a significant role in land value determination in any community. In the light of this, the qualities of three selected neighbourhoods in Minna were assessed. Neighbourhood quality survey forms were administered in each of the selected neighbourhoods using the quality index of Housing Consumption, Connection Characteristics, Site Characteristics and Location Characteristics. The trends in residential land value in the selected neighbourhoods were also appraised. Analysis of variance was carried out to examine the difference in price of land across the three selected neighbourhoods within the period of 5 years (2010 - 2014). The analysis of variance shows that there is a statistical difference in the price of land in the selected between 2010 and 2014. The study also reveals that Kpakungu neighbourhoods have the poorest rating amongst the other two neighbourhoods (Tunga and F-Layout). The study also recommends that infrastructures should be systematically increased with the present rate of urbanization in the neighbourhoods and that urban renewal scheme should be embarked upon to improve the neighbourhood quality of Kpakungu.

Keywords: Infrastructure, Land value, Neighbourhood Quality, Urbanization

Introduction

The well being of the inhabitants of an urban area depends on its environmental quality, which is defined by the neighbourhood quality of the area. Neighbourhood quality has been found to have direct impacts on the social and economic development of any given community (Cubbin, Pedregon, Egerter and Braveman, 2008). Unfortunately, this important aspect of quality life and man's environment has been found to be deteriorating, especially in the developing countries of the world (Siddharth, 2008). Urbanization in developing countries, Nigeria inclusive, has generated neighbourhood problems, because towns and cities in the developing countries emerged without any conscious physical development planning, which is often accompanied by inadequate basic amenities and

infrastructure (Egunjobi, Jelili, and Adeyeye, 2007). This phenomenon is evident in Nigerian cities which are often characterized by poor physical planning.

Residential land use planning approach in Nigeria can be described as an afterthought as most of the structures are already on ground before planning for them is muted. This means that buildings are allowed to spring up before the physical planning of the neighbourhood commences. The resultant effects of the problems are proliferation of slum in cities, overcrowding and the emergence of substandard neighbourhoods which lack basic infrastructure to support its dwellers. It is believed that the availability of infrastructures is consequential to neighbourhood quality of any city (Onibokun, 1985). That is, land value does not only depend on the physical characteristics of a building, but also on the surrounding built environment which may reflect on the function of the adjoining land, location of the land and the accessibility of the land. All these factors will help in the valuation of any land value (Topcu, 2009). Topcu (2009) further stressed that, the Quality of the environment or neighbourhood will affect land values within a city. This implies that, residential users will pay very high as regards a property (land) in a high quality neighbourhood. This assertion was also shared by Harvey (2000) who opined that clients will be willing to pay very high for property (land) located in a "good" neighbourhood with due consideration for available infrastructure. Bello, Adeniyi and Arowosegbe (2015) also share this view, and believed that land value will

be high in neighbourhoods where basic facilities such as telecommunication, public water supply, roads, electricity and good drainages are found.

Neighbourhood quality concept is an abstract phrase defined by the result of human activity and nature in different ways. Many authors have different perception on the concept of neighbourhood quality. According to Wong (2005) neighbourhood quality is considered as a multi-dimensional concept because it has a wide range of aspects. Fatemeh (2013) on the other hand, sees neighbourhood quality as a phenomenon or event that is formed by the interactions of physical characteristics on one hand and cultural patterns and mental abilities of the observer on the other hand. Various studies have been carried out by authors on the impact on neighbourhood quality on Land value.

Ilesanmi (2012) in his study of neighbourhood quality laid emphasis on housing quality, neighbourhood quality and quality of life and opined that, to have a sustainable neighbourhood quality, it is pertinent to have a participatory approaches and enhanced collaboration between stakeholders to maintain present housing and neighbourhood stock in Nigeria. Ilesanmi (2012) categorized neighbourhoods into two, that is, low-income and medium income in carrying out his assessment. Quality indicators of housing consumption, connection to services, site characteristics and location characteristics were used as an index for assessment. In his findings, Ilesanmi (2012) indicated that the

housing characteristics of the medium-income were distinctly of better quality than those of the low-income.

The study also reveals that, Corruption and lack of commitment/sincerity on the part of many housing sector stakeholders (policy and decision-makers, legislators, housing administrators, construction contractors, consultants, financiers, economists, and non-governmental organizations) are the contributing factor to housing and neighbourhood quality. Bello, Adeniji and Arowosegbe (2015) believed that some determinant cannot be undermined in describing neighbourhood quality and these determinants are infrastructural facilities. Bello, Adeniji and Arowosegbe (2015) were of the opinion that infrastructural facilities do not only enhance the neighbourhood quality, but it also increases the land value in that neighbourhood adversely. Similarly, Gatauwa and Marungi (2015) in their own findings also indicates that improved transport networks, improved social amenities, industries, expanded educational institutions and commercial centres also enhances neighbourhood quality and the Land value therein.

It is also believed that Land value prices depend on two broad factors that is, tangible factors characteristics of the dwelling units and intangible factors - neighbourhood characteristics, services and environment. Islam (2012) in his study estimates the impact of neighbourhood characteristics, particularly adjacent ravines, amount of public land and incidence of crimes on house prices. Using the Several multiple regression models Islam (2012) established that, household income and adjacency to ravines positively influence house prices. Islam (2012) also reveals that, the inclusion of an irrelevant variable is less problematic than the exclusion of a relevant variable. Based on all these findings of the literatures reviewed, the need to improve neighbourhoood quality is brought to the fore.

According to Okusipe (1999) neighbourhoods quality of a city will influence the social and economic development of that city. This assertion by Okusipe (1999) is not far-fetched with neighbourhoods of developed countries, but in developing countries where planning is given less regard, the social and economic development of cities may not be achieved because infrastructures which enhance neighbourhood quality are not systematically increased with the rate of urbanization experienced in cities in developing countries (Siddharth, 2008). This situation is also peculiar to Minna, Niger State. The rapid urbanisation in Minna, Niger state has led to chaotic planning in some neighbourhoods of the city, because infrastructures are not systematically provided with the level of urbanization experienced and this has affected the quality of the neighbourhoods within the city. Against this background this paper assessed the impact of neighbourhood quality on residential land value in Minna, Niger State.

Study Area

Minna is located on Latitude 9°37' North and Longitude 6°33' East and occupies a land area of about 1710.715 km² with a population of 350,287 (NPC, 2006). Minna, the Niger State capital comprises of 26 neighbourhoods (figure 1). These neighbourhoods are Angwan Daji, Bosso Town, Barkin Sale, Chanchaga, Jikpan, Limawa, Kateren Gwari, Kpakungu, Kwangila, Maitumbi, Makera, Minna Central, Railway Quarters, Sabon Gari, Sauka Kahuta, Shango, Duste Kura, Tayi Village, Tudun Fulani, Tudun Wada South, Tudun Wada North, Fadipe, Tunga, F-Layout, GRA and Bosso Estate.
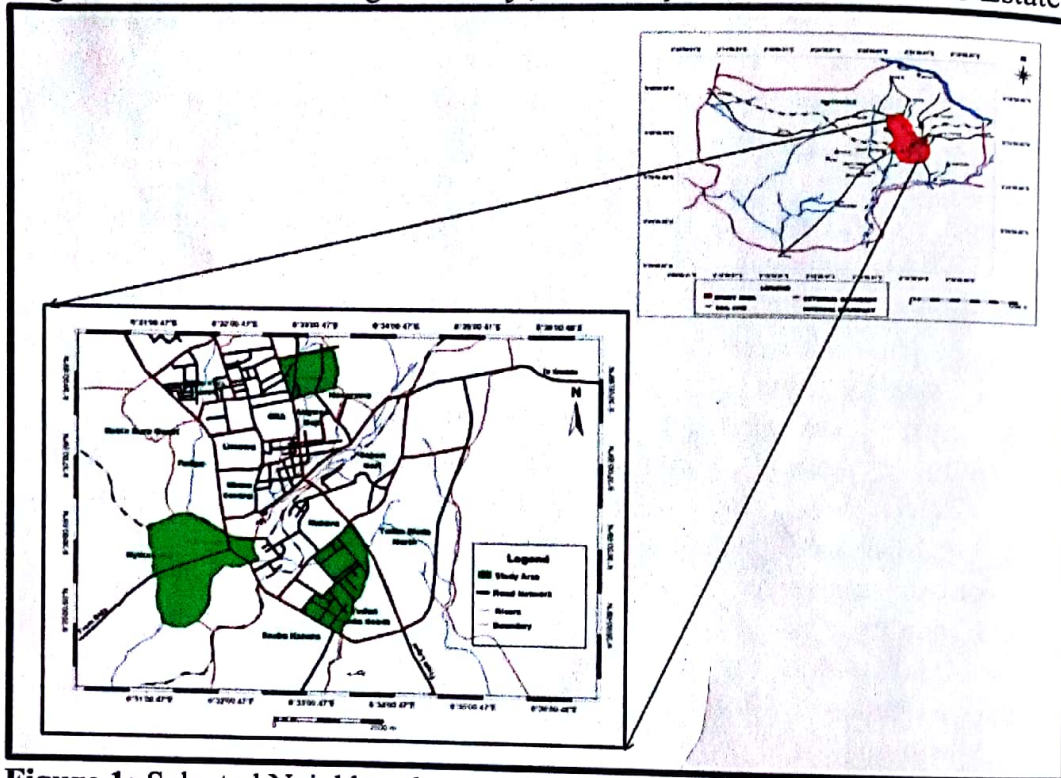

Figure 1: Selected Neighbourhoods in the Street Guide of Minna
Source: Department of Urban and Regional Planning Futminna, 2015

Materials and Methodology

This research identified two major study elements for investigation, namely neighbourhoods quality and land value. The target populations for this study are the neighbourhoods of Minna, Niger State. The sample frame for this research is the property identifiable in every single element and includes the elements in a sample. A total of 26 neighbourhoods were identified in Minna town, these neighbourhoods were further classified into three densities that is, high, medium and low densities.

Out of the established 26 neighbourhoods identified, 17 were high density (Angwan Daji, Bosso Town, Barkin Sale, Chanchaga, Jikpan, Limawa, Kateren Gwari, Kpakungu, Kwangila, Maitumbi, Makera, Minna Central, Railway Quarters, Sabon Gari, Sauka Kahuta, Shango and Duste Kura), 6 were medium density (Tayi Village, Tudun Fulani, Tudun Wada South, Tudun Wada North, Fadipe and Tunga) while 3 low density were identified (G.R.A, Bosso Estate and F-layout). These

neighbourhoods constitute the sample frame for this study.

In each of the density (high, medium and low), a neighbourhood was randomly selected using cluster sampling technique. On this premise, a sample size of three(3) neighbourhoods was chosen out of the 26 neighbourhoods using cluster sampling technique. The three (3) randomly selected neighbourhoods are Kpakungu, Tunga and F-Layout. These three (3) neighbourhoods represent 12% of the total neighbourhoods of Minna town.

The primary and secondary sources of data collection were adopted in this study. For the primary source of collection, a reconnaissance survey was carried out in all the selected neighbourhoods (Kpakungu, Tunga and F-Layout) wherein measurements and photograph was taken and neighbourhoods quality survey forms were administered. The neighbourhood quality form prepared for the survey was adapted from Sengupta and Tipple (2007) indicator variables which are: Housing consumption, connection to services, neighbourhood characteristics and location characteristics. The features of the Sengupta and Tipple (2007) variables were used to assess the neighbourhood quality of Minna town (Table 1). The indicators variables adapted from Sengupta and Tipple (2007) were further simplified to quality of neighbourhood roads/streets, waste management, drainage system, adequacy of electricity, adequacy water supply, organized open space and basic social amenities for easy assessment.

Table 1: Neighbourhood Quality Indicator Variables

Variables	Features
Housing Consumption	Dwelling size and occupancy rates
Connection to services	Level of main infrastructures such as water supply, waste disposal and sanitation.
Neighbourhood/site characteristics	Playground, openspace and other community facilities.
Location characteristics	trade-off between journey-to-work time and size of units.

Source: Sengupta and Tipple, 2007.

For the secondary source of data, trend of residential land values in the neighbourhoods under studied (Kpakungu, Tunga and F-Layout) between 2010 and 2014 were collected from selected estate surveying and valuation firms operating in Minna, Niger State (Kemiki and co., Babatunde and Co., Adoga and Co.) In order to ascertain the level of significance of the differences in neighbourhood quality and land value in the three (3) selected neighbourhoods, the hypothesis was set and tested with analysis of variance (ANOVA). The hypotheses set are:

H_0: There is no statistically significant in the price of land between 2010 - 2014 in the selected neighbourhood.

H_1: There is statistically significant in the price of land between year 2010 - 2014 in the selected neighbourhood.

Results and Discussion
Qualities of the selected Neighbourhoods

The quality of Roads of the selected neighbourhoods (Kpakungu, Tunga and F-Layout) are assessed in Table 2. The Table reveals that F-Layout has the longest tarred and motorable roads totaling 6,500 metres in length. This was followed by Tunga with total length of 4,200 metres. While Kpakungu recorded the least length of tarred and motorable roads with a total length of 456m. However, parts of the tarred motorable roads and streets have major defects such as potholes and broken kerbs (tarred and defective) which make vehicular movement difficult. Against this background, the study reveals that, 14m length of roads in Kpakungu are with defect while 280m and 1,100 (1.1km) of roads in Tunga and F-Layout respectively, are with defect. The percentage of poor quality of roads in the neigbourhoods understudy indicates 14.47% of the roads in F-Layout are poor, 36.60% of the roads in Tunga are in poor condition. The highest percentage (85.80%) of poor roads were identified at Kpakungu neighbourhood. This implies that the problems of accessibility were pronounced in Kpakungu.

Table 2: Quality of Road/Street Length (in Metres):

Quality indicators	Kpakungu	Tunga	F-Layout
Length of Tarred & motorable roads	456m	4,200m	6500m
Length of Tarred & defective roads	14m	280m	1,100m
Length of Untarred & motorable roads	550m	1,700m	-
Length of Untarred & defective roads	2,200m	445m	-
Total	3,220m	6,625m	-
Percentage of Poor Quality	85.80%	36.60%	14.47%

Source: Medayese *et al.*, 2015

Solid waste management is a major challenge in the selected neighbourhoods. The highest number of open waste dumps was identified in Kpakungu, accumulating an estimated volume of 235 cubic metres of solid waste materials (see table 3). This is an indication that, approximately 5 household heads contributing 1 cubic metre to the total volume of solid waste generated. This scenario may pose a great threat to the health of the residents of Kpakungu neighbourhood. The high waste generation in Kpakungu can be attributed to the informal nature of the neighbourhood. A total of 68m³ and 25m³ solid waste generations were recorded for Tunga and F-Layout respectively (Table 3).

Table 3: Waste Management Quality

Quality indicators	Kpakungu	Tunga	F-Layout
Number of open waste dumps identified	11	3	2
Total area of dump sites identified	102m²	36m²	12m²
Total volume of waste accumulated	235m³	68m³	25m³

Source: Medayese *et al.*, 2015

Table 4 highlights the drainage types identified in the neighbourhoods understudy. The drainages identified in the 3 neighbourhoods are Open coordinated drainage, Open Uncoordinated drainage, closed coordinated drainage and the closed uncoordinated drainage. The reveals that 69.0% of the drainages in Kpakungu are in poor state, these drainages are either silted or serve as a refuse disposal point by the residents of Kpakungu neighbourhood (Plate 1). In Tunga neighbourhood, 21.9% of the drainages were discovered to be in poor condition, these drainages found to be broken and silted. The study further discovered that drainages in F-Layout were in good condition, only 4.0% of the drainages found in the neighbourhood were said to be in poor condition.

Plate 1: Indiscriminate dumping of refuse in drainage at Kpakungu Neigbourhood
Source: Medayese *et al.*, 2015

Table 4: Drainage System Quality Length of drainage types (in metres)

Quality indicators	Kpakungu	Tunga	F-Layout
Open coordinated	300m	1,650m	2,564m
Open uncoordinated	1,003m	570m	252m
Closed coordinated	150m	1000m	3500m
Closed uncoordinated	0.0m	175m	0.0m
TOTAL	1,453m	3,395m	6316m
PERCENTAGE OF POOR QUALITY	69.0%	21.9%	4.0%

Source: Medayese *et al.*, 2015

Table 5 explains the Neighbourhood characteristics of the 3 Neighbourhood. The tables make known that; Power and water supply were found inadequate in the 3 selected neighbourhoods. Kpakungu and Tungu Neighbourhoods enjoy less than 12 hours' electricity supply per day, only F-Layout neighbourhoods enjoyed 12 hours of electricity supply which could be termed as fair. Electricity supply was being rationed (4 hours on and 4 hours off, in most cases) in F-Layout Neighbourhood. Water supply from the public mains was found to be grossly in adequate in all the 3 selected neighbourhoods. It was noted that, out of the 168 hours in a week, residents of the selected neighbourhoods (Kpakungu, Tunga and F-Layout) only enjoyed 8 hours of water supply on the average. The implication of this deficient in electricity supply and water supply in all the 3 selected neighbourhoods is that, residents spend large percentage of their income on generators fuelling and buying water from alternative sources such as mobile hawkers, borehole and wells.

As regard healthcare services, it was found that 1 healthcare centre was located in Kpakungu Neighbourhood despite the high population found there. In F-layout neighbourhood, 1 healthcare centre was also found, while 3 healthcare centre were found in Tunga neighbourhood (See table 5). Finally, the study revealed that primary and secondary schools in the selected neighbourhoods were inadequate based on the neighbourhood principle stipulated by Clearance Perry in the 1920s that 1 primary school should serve a population of 6,000 - 12,000.

Table 5: Neighbourhood Characteristics

Quality indicators	Kpakungu	Tunga	F-Layout
Adequacy of Electricity:			
Hours of power supply per day	10hrs	10hrs	12hrs
Number of transformers identified	2	4	8
Adequacy of Water Supply:			
Water supply by Water Board per week	8hrs	9hrs	8hrs
Basic Social Amenities:			
	1	3	1
Number of healthcare centres identified	4	18	9
Number of primary and secondary schools			
Organized Open Space	-	2	4

Source: Medayese et al., 2015

Table 6 shows the average value of land per square metre for a five-year period in the selected neighbourhoods which was obtained from a sampling of property owners in the identified neighbourhoods on the cost of purchase of their land and the current open market value of the land. Land

value in F-Layout neighbourhood is highest, followed by Tunga, and Kpakungu in that descending order, as for the periods understudy (2010-2014). Basically, it can be deduced from the analysis above that, the value of land in F-layout as a neighbourhood is a function of the quality of the environment and the level of planning in the environment, while, the low

land value in Kpakungu is attributable to the poor planning and poor neighbourhood quality in the kpakungu neighbourhood. The study revealed that Kpakungu is characterised by poor housing and grossly inadequate basic amenities and infrastructure facilities.

Table 6: Trend in Average Land Value (N/m^2) in the Selected Neighbourhoods from 2010- 2014

Neighbourhood	2010	2011	2012	2013	2014
Kpakungu	1,220	1,220	1,440	1,660	1,660
Tunga	2,220	2,220	2,440	2,610	2,780
F-Layout	2,830	2,880	3,050	4,220	4,220

Source: Medayese *et al.*, 2015

Analysis of Neighbourhood Quality of Neighbourhoods in Minna Town

This study revealed that the quality of the selected neighbourhoods influenced the value of land and landed properties in these neighbourhoods. The average value of land has been found to be high in F-Layout, with ₦4,220 Per square metre in 2014. This was because of the improved neighbourhood when compared to other neighbourhoods surveyed and this aspect of

neighbourhood quality contributed to the relative high land value in the area. Tunga was rated second with an average land value of ₦2,780.00 per square metre in 2014. The location of banks in Tunga neighbourhood was the strong factor that has aided the high land value in Tunga neighbourhoos. Though characterised by high population density, inadequate housing and neighbourhood qualities, low land values were still recorded in Kpakungu despite being a nodal settlement.

Table 7: Correlation of the three neighbourhoods

		2010	2011	2012	2013	2014
2010	Pearson Correlation	1	1.000*	1.000**.959		.527
	Sig. (2-tailed)		.014	.000 .183		.646
	N		3	3 3	3	3
2011	Pearson Correlation	1.000*	1	1.000* .965		.545
	Sig. (2-tailed)	.014		.014 .169		.633
	N	3	3	3 3	3	3
2012	Pearson Correlation	1.000**	1.000*	1	.959	.527
	Sig. (2-tailed)	.000	.014		.183	.646
	N	3	3	3 3	3	3
2013	Pearson Correlation	.959	.965	.959	1	.746

Sig. (2-tailed)	.183	.169	.183		.464
N	3	3	3	3	3
Pearson Correlation	.527	.545	.527	.746	1
2014 Sig. (2-tailed)	.646	.633	.646	.464	
N	3	3	3	3	3

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Medayese *et al.*, 2015

In the three selected neighbourhoods Kpakungu, Tunga and F-Layout the analysis of variance test carried out is shown in Table 7 which reveals that the ANOVA test recorded F-ratio value of 24.112 and P value of 0.001. Hence, since the P value is less than 0.5 at 95% confidence level, this implies that there is a statistically significant difference in the price of land in the selected neigbourhoods. Therefore, a H_0 will be rejected and H_1 will be accepted. This signifies that the neigbourhoods quality influences price of land

Table 8: Analysis of Variance for the three neighbourhoods.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10000653.333	2	5000326.667	24.112	.000
Within Groups	2488520.000	12	207376.667		
Total	12489173.333	14			

Source: Medayese *et al.*, 2015

Recommendations and Conclusion

Poor neighbourhood condition hampers national economic growth by reducing property taxability as a result of not putting land to its highest and best use. The following recommendations are based on the research findings. The study observed inadequate infrastructure in the selected neighbourhoods. These include poor road and street networks, waste management and inadequate power and water supplies. Based on this finding, this study recommends, that governments (state and local) embark on purposeful infrastructural development through construction and upgrading of the new existing ones. More so, infrastructure should be systematical increase with the increasing population.

An urban renewal scheme should be embarking upon so as to improve the neighbourhood quality of Kpakungu which is referred to as a slum, by so the doing Kpakungu neighbourhood will be given a face lift. As an aspect of city re-planning and slum upgrading, government should facilitate the provision of basic amenities without compromising quality. This study suggests that, in the process of land use planning, the place of public participation, which

has been neglected over the years, becomes very important.

This study has shown that neighbourhood quality has significant impact on the residential land value in the study area. Land value is still relatively low compared to other state capitals in Nigeria like Ikeja, Ibadan, Port-Harcourt, and Kano. The study has also identified neighbourhood quality as important determinants of land value and hence need to be considered in urban planning, development and policy and decision making. With respect to these findings and its implications, there is need for conscious effort to carefully consider the issue involved in neighbourhood quality to ensure highest best use of the residential land in the study area. There is need for change in the approaches and strategies applied to addressing urban problems such as poor neighbourhood quality, so as to achieve and maintain economically, environmentally and socially sustainable development in metropolitan Minna.

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