

URBAN HOUSING QUALITY AND ITS HEALTH IMPLICATIONS IN NIGERIA: AN EXAMPLE OF LOKOJA, KOGI STATE, NIGERIA

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Abstract

Developing countries are faced with qualitative and quantitative housing inadequacies. Living conditions in many urban areas are squalid and pose serious health challenges on the inhabitants. This study examines the housing quality and its health implications in Lokoja metropolis. Both primary and secondary data were employed. A structured questionnaire was designed. An average of forty questionnaires was distributed across each of the three residential areas identified in the city to elicit information about the types of residential units occupied by the residents of the city and the facilities available in their houses such as toilets, electricity, and drainage. Secondary data was obtained from documentary sources. Descriptive and inferential statistics were employed to analyze the data. The findings reveal that more than 60% of the inhabitants live in indecent houses. The cost of housing is exorbitant to an average household in the city. This may advance the reasons substantial numbers of urban residents live in slum areas which are affordable to them. Further analysis reveals that the quality of housing varies across the residential areas identified in the city. Similarly, environmental health challenges vary across the three residential areas in Lokoja. The study recommends that low cost housing scheme should be established in Lokoja as this may reduce housing problems in the city. Also, this will enable the urban residents to live in a healthy environment and consequently improve the standard of living of urban dwellers in Lokoja.

Key Words: *Housing, Quality, Poverty, Facilities and Planning*

Introduction

Housing quality refers to structural attributes and facilities provided for the inhabitants of a building to live a decent life. The structural attributes of housing refer to materials used to build houses such as mud, thatch, corrugated iron sheets, wood, while the internal facilities include pipe water, access to toilets and electrical appliances (Bradley and Putnick, 2012). In a research conducted on housing quality in Benin, Nigeria, Moughalu (1991) found that about

80% of dwellings in the city met minimum standards for external construction materials but less than half of the buildings met minimum standards for internal facilities. In a similar study carried out in Ondo in south western Nigeria, an approximately 80% of residents lived in households having three rooms or fewer, nearly 40% of which were not in good condition (Aribigbola, 2008). Also, another study carried out in Ghana revealed that majority of residents lived in substandard houses, especially those living

in the rural communities (Fiadzo, 2004). Provision of drinkable water is a significant factor in determining good housing quality. In a study of household accessibility to drinkable water in Sub Saharan African countries, the quality of drinking water is a powerful environmental determinant of health. Assurance of drinking-water safety is a foundation for the prevention and control of waterborne diseases. (http://www.who.int/water_sanitation_health/dwq/en/)

The issue of sanitary facilities in developing countries is a serious concern to all and sundry. In a joint press release by Unicef and World Health Organization in 2008, approximately sixty-two per cent of Africans do not have access to an improved sanitation facility which separates human waste from human contact. Approximately 2.6 billion people around the world who live without access to toilet at home are vulnerable to a range of health risks. Also, forty per cent of the world's population lack access to toilets. And studies have shown that improving access to sanitation helps to create a physical environment that enhances safety, dignity and self-esteem. Safety issues are particularly important for women and children, who otherwise risk sexual harassment and assault when defecating at night and in quiet areas (<http://www.who.int/mediacentre/news/releases/2008/pr08/en/>). The main objective of examining housing characteristics is to determine the quality of life of urban residents in any geographical space. The type of house an individual lives in is one of the parameters used to determine the quality of life of the people. (Meng and Hall, 2006; Roberts *et al.*, 2001). Even though more research conducted on housing characteristics focuses on major urban centres in Nigeria particularly Lagos, Ibadan, Kano and Port Harcourt (Aluko,

2011; Gambo *et al.*, 2012; Dankani, 2013). Despite numerous research with laudable recommendations for alleviating housing problems in some of these cities, acute shortage of housing and substandard buildings ravage some these emerging cities in Nigeria. It is against this background that this study is designed to examine housing characteristics in Lokoja, a city located in the north central part of Nigeria where more than ten ethnic groups reside with different cultural backgrounds. The cultural difference in this city may affect patterns and characteristics of house types, which may have implications on the quality of housing occupied by residents of the city.

Study Area

Lokoja metropolis is the study area and it is located on the confluence of River Niger and River Benue. It is the capital city of Kogi State and can be found between latitude 7° 45' 27.56" - 7° 51' 04.34" N and longitude 6°41' 55.64" - 6°45' 36.58" E of the equator with a total land coverage of about 63.82 sq. km. (Adeoye, 2012). In a study of land use / land cover change in Lokoja, Adeoye (2012) reported that natural environment particularly vegetation, wetland resources, water bodies and mountain terrain were threatened as they were reducing gradually in the area extent over time, while the built up area expand massively. The built up area of Lokoja is located at the eastern part of River Niger, while the Mount Patti is located at the western part of the city (figure 1). These two physical features act as an impediment to the growth and development of the city. Since its creation as the headquarters of Lokoja local Government in 1976 and the state capital of Kogi state in 1991, it has witnessed high rate of urbanization within the last three decades, which is a major characteristic of urban centres in Nigeria (Olawepo, 2009). The upsurge in population growth in the town

over the years has led to acute shortage of decent accommodation for inhabitants and high inflation rate on available houses in the city. This could largely be responsible for the reason why substantial number of urban

residents in Lokoja live in slum areas and uncompleted buildings in an attempt to cut down the exorbitant price of accommodation in the city.

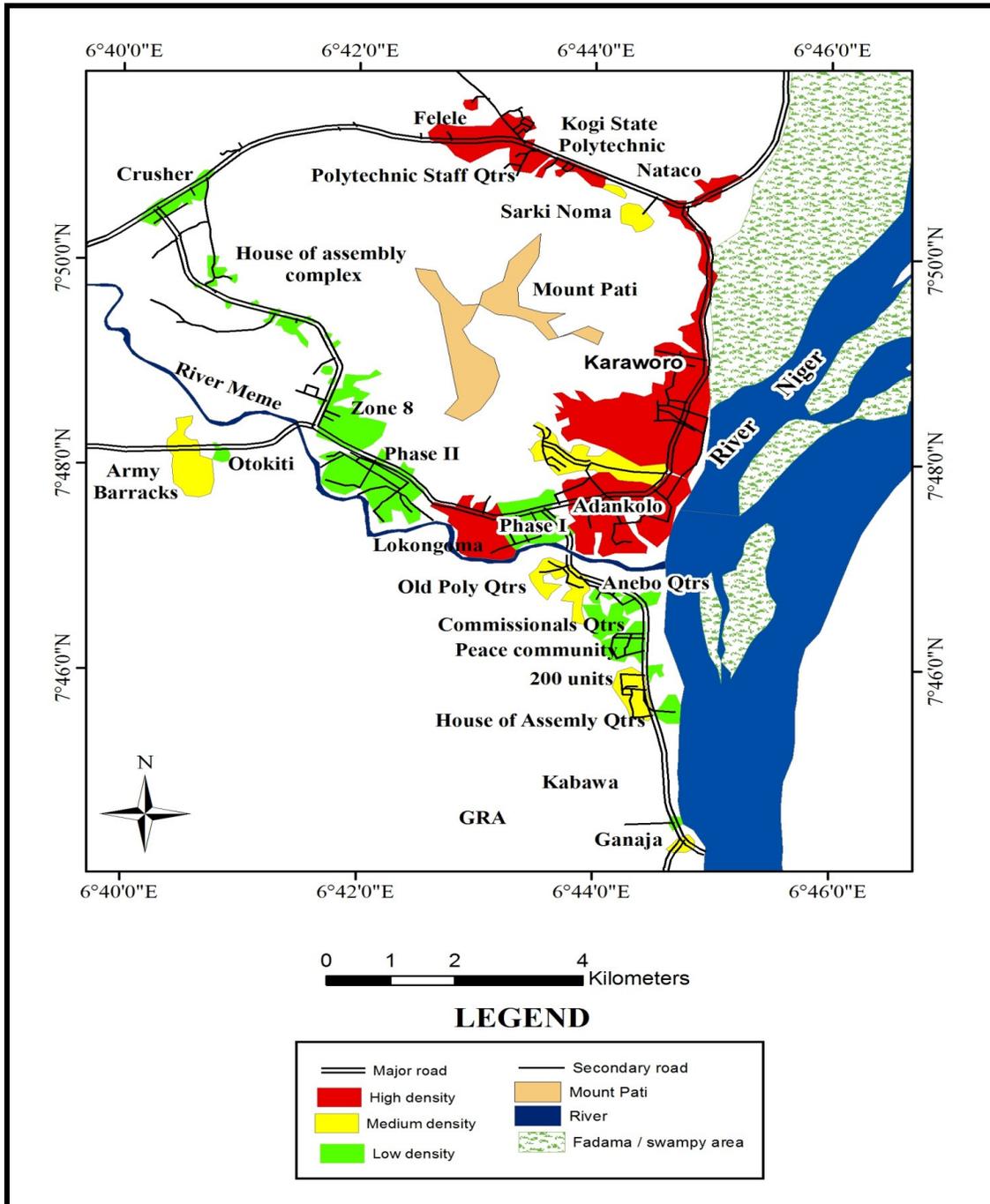


Figure 1: Map of the study Area showing Residential Areas.

Materials and Methods

Lokoja Metropolis was classified into three residential areas based on large use characteristics and population concentrations. Both primary and secondary data were employed. A structured questionnaire was designed to elicit information about the types of residential units occupied by the residents of the city and the facilities available in their houses such as toilets, electricity and drainage system. A systematic random sampling technique was employed to administer an average of forty questionnaires to the head of each household along the major roads in each of the residential areas identified in the city. The administration of questionnaire is based on the principle that one in every 20 buildings selected for questionnaire administration. In each of the sampled buildings, questionnaires were administered to only one head of a household. The secondary data was obtained from documentary sources. Descriptive and inferential statistics were employed to analyze the data.

Result and Discussion

Housing Characteristics in Lokoja

The findings reveal that houses in the inner core of Lokoja are built with mud block with little or no ventilation as many of these buildings are clustered together. Even though some of these houses are built more than hundred years ago, they are still occupied by indigenous people without any changes. It is pertinent to note that many of the buildings at the high density areas of the study area particularly at Adankolo, Kabawa Angwan Fulani and Karaworo have no access road. Many of the occupants of buildings in these areas of the city cannot move freely without body contact because many of the developers of the buildings did not comply with the planning regulations. At

Angwan Fulani, more than thirty buildings are clustered together. There is little or no sign of separation among the buildings. This type of residential development is called compound settlement. There is little or no ventilation despite the hot weather condition in the city. Table 1 below reveals that 34.7% of the households sampled in the city occupy a one- roomed apartment, 24% of the residents indicated that they occupied one bedroom flat. Another 11.2% and 10.2% of the respondents claimed that they occupy two bed-roomed houses and three bedroomed apartments respectively. This implies that more than 60% of the households interviewed in the city could not afford more than a two-bed roomed apartment. Further analysis indicates that approximately 19.4% of the inhabitants of Lokoja live in more than a three-bedroomed apartment. The last category of the people live on the outskirts of the city and are economically buoyant to afford to occupy more than a three-bedroom flat despite the high cost of accommodation in the city. The result of this analysis is tangential to the study carried out in south western Nigeria by Aribigbola in 2008 in which he reported that an approximately 80% of residents lived in houses having three rooms or fewer, nearly 40% of which were not in good condition.

Table 1: Types of Residential unit Occupied by Households Member

Types of houses	Percentage
One room apartment	34.7
A bedroom flat	24.5%
Two bedroom flat	11.2%
Three bedroom flat	10.2%
More than three bedroom flat	19.4%
Total	100.0%

In spite of the acute shortage of housing accommodation in the city where more than two thirds of the households occupy one bedroom apartment, the average household

size occupying different types of residential units identified in the city is another important factor which requires more to be desired. Table 2 below shows that 50.1% of the households interviewed in Lokoja claimed that they have an average of five members in a house. Another 31.6% of the respondents indicate that they have an average of 6-10 members of their family in one house. Approximately 18.3% of the households interviewed indicated that they have more than 10 people in their family. The largest proportion (12.2%) of the households sampled who indicated that they have a household size of more than 10 people reside in high density areas of the city, where the buildings are clustered together with little or no ventilation. Many members of the household interviewed expressed their dissatisfaction about the house they occupy but they claimed that they could not help the situation.

Table 2: Household size in Percentage

Residential Density	1- 5	6-10	More than 10
High Density	16.3	12.2	12.2
Medium Density	19.4	13.3	5.1
Low Density	15.3	6.1	1.0
Total	50.1	31.6	18.3

With respect to the structural pattern of buildings in Lokoja, many of the houses occupied by the inhabitants of the city are uncompleted buildings. Some of the buildings are not plastered, with few having sealing or asbestos. Table 3 below shows

Table 4: Sources of Water in Lokoja

Residential Density	Tap Water	Well Water	Stream or River	Bore Hole
High Density	36.7	1.0	1.0	0.0
Medium Density	19.4	10.2	1.0	8.1
Low Density	3.1	0.0	0.0	19.5
Total	59.2	11.2	2.0	27.6

that 56.6% of the respondents indicate that their houses were not fenced, while the remaining 43.5% of the households interviewed claimed their houses were fenced.

Table 3: Residential Buildings with Fence in Percentage

Residential Density	Yes	No
High Density	17.2	23.2
Medium Density	18.2	19.2
Low Density	8.1	14.1
Total	43.5	56.5

Access to Potable water

Water is essential for sustainable human development. Access to portable water will improve the health status of people in any geographical space. There are different sources of water available for urban residents in Lokoja. For instance, Table 4 indicates that 59.2% of inhabitants of the city have access to tap water. The majority of these people live in High and Medium density areas of Lokoja. Further analysis shows that 11.2% of the residents in Lokoja rely on well water for their domestic uses, which might have been contaminated with water borne diseases. Akin to this finding, Lindskog and Lundqvist (1998) affirmed that contaminated drinking water is a major source of cholera and diarrhea in rural area in Malawi. A significant population (27.6%) of the inhabitants of the city relies on bore holes. The last category of this respondent resides in the low density parts of the study area particularly at ZangoDaji and Felele.

Toilet Facilities

Access to modern toilet facilities will separate human waste from human contact and consequently reduces households' vulnerability to a range of health risks. Table 5 indicates that 82.8% of the respondents indicated that they have toilet facilities in their houses. Approximately 17.2% of the remaining populations claimed that they are less accessible to toilet facilities. More than 50% of the last category comes principally from the high density area of Lokoja. Some of these respondents interviewed at the high density area claimed that they defecate on erosion channels, uncompleted buildings, open spaces and on the banks of River Niger in the city. This is largely responsible for why Angwan Fulani, Kabawa, Karaworo and Adankolo areas in Lokoja are polluted with stench. To worsen the situation, many of the households interacted with at Agwan Fulani and Kabawa claimed that their wards are more exposed to reptile when defecating along the river channel. They also express their dissatisfaction that there females are prone to different kinds of harassment since they are exposed to passersby. Obviously, these categories of urban dwellers do not live a decent life. Similar observation was made by World Health Organization in 2008, which reported that 18% of the world population practices indiscriminate or open defecation.

Table 5: Household Member to toilet Facilities

Density Area	Yes	No
High Density	30.1	9.7
Medium Density	35.5	4.3
Low Density	17	3.2
Total	82.8	17.2

Types of Toilet Facilities in Lokoja

Table 6 indicates that 23.1% of the respondents use pit toilets in the study area. A close observation of many of the pit toilet facilities available to urban dwellers in the

city shows that they are dug close to water well, which may contaminate water used for domestic purposes. The remaining 76.9% of the households sampled claimed that they have water closet in their houses.

Table 6: Toilet Facilities to Households Members in Lokoja

Toilet Facilities	Percentage
Pit toilet	23.1
Water closet	76.9
Total	100.0

Drainage Facility

Urban centres in Nigeria are less accessible to good drainage facility. Those that have are poorly maintained. The situation in Lokoja is not different from what exists in some other cities in Nigeria. Table 7 shows that 24.5% of households sampled in the study area have drainage facilities connecting their houses, while the remaining 75.5% of the respondents indicated that they do not have drainage facilities in their houses. It is disheartening to observe that many of the drainage facilities in the study area are blocked by waste generated by urban dwellers. The offensive odor emanating from many of this drainage are harmful to human health. Even though the sanitation agencies have made concerted efforts to collect waste so as to keep the environment clean but their efforts have proved abortive as the heap of waste along the drainage and road intersections pile up daily in the city. This implies that many of the urban residence may be vulnerable to environmental and health challenges in the city.

Table 7: Drainage Facilities in Lokoja

Drainage Facility	Percentage
No	24.5
Yes	75.5
Total	100.0

Factor Analysis

Factor analysis has been employed to determine the principal explanatory variable that influences the pattern of housing quality in three residential areas in Lokoja metropolis. The result of factor analysis in Table 8 indicates that five factors whose Eigen value is greater than unity constitutes approximately 82.44% of the variance of the factors influencing housing quality in the city. Variables loaded on Factor 1 are structural design of the buildings (Age of Buildings=.606; Toilet Facilities= 0.799 and Fence = 0.82) and these accounts for 28.56% of the variance of the factors influencing housing quality in the city. The result of this analysis is tangential to studies of housing quality in North America, Europe, Egypt and Asia Minor, which emphasis on structural design as well as facilities provided in a house as a perquisite's for decent accommodation(Evans, 2006; Arik and Arik, 2009). Factor 2 accounts for about

18.62% of the variance of the factors affecting housing quality in Lokoja. Variable loaded on Factor 2 is (Building Set Back =0.798). Also, Factor 3 which has 14.97% of the total variance has its variable loaded on socio economic characteristics of the inhabitants of the city (Household size =.626; Household Occupation = .473). It is obvious that the socio economic characteristics of the inhabitants of the city determine to a larger extent the type of house they occupy. Factor 4 accounts for 13.76% of the variance of the factors influencing housing quality in the study area. Sanitary facilities provided in the household (Drainage Facility=.771) is the major component matrix loaded on factor 4. Table 8 indicates that variable loaded on Factor 5 which influences housing quality is the method of waste disposal in the neighborhoods in the city and this accounts for 7.42% of the variance.

Table 8: Result of Factor Analysis of variables affecting housing Quality in Lokoja Component Matrix

	Component				
	1	2	3	4	5
Household Size	.584	.002	.626	-.417	.078
Educational background of respondents	-.368	.516	-.584	-.359	-.070
Types of residential Unit occupied	.653	-.102	.178	-.605	-.141
What is the average distance of your building from the next house?	-.209	.798	.271	.158	.323
Age of building	.606	.350	-.127	.470	-.090
If you have drainage channel in your house how often do you clear it in a week?	.569	.468	-.148	.406	.251
Do you have toilet facility?	.799	-.142	.048	-.176	.185
Do you have drainage channels in your house?	.053	-.227	.350	.771	-.318
Is the residential building you are occupying fenced?	.820	.397	-.251	.049	-.203
If there are no toilet facilities in your house where do you defecate?	-.319	.262	.649	.184	-.527
How do you dispose the solid waste from your neighborhoods?	-.167	-.869	-.144	.017	.346
Residential Zone	-.432	-.526	.321	-.264	.374
Occupation	-.546	-.013	.473	.309	.187
The name of your house location	.657	-.149	.379	.127	.287

Extraction Method: Principal Component Analysis
5 components extracted

Table 9: Principal Component Matrix
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,998	28,556	28,556	3,998	28.556	28.556
2	2,606	18,617	47,174	2,606	18.617	47.174
3	1,976	14,112	61,286	1,976	14.976	61.286
4	1,923	13,733	75,019	1,923	13.733	75.019
5	1,039	7,420	82,440	1,039	7.420	82.440
6	.818	5,844	88,284			
7	.517	3,693	91,977			
8	.443	3,167	95,144			
9	.353	2,518	97.663			
10	.176	1,260	98.923			
11	.124	.883	99.805			
12	.022	.158	99.963			
13	.005	.037	100.000			
14	1.000E-013	1.002E-013	100.000			

Extraction Method: Principal Component Matrix

Conclusions and Planning Implications

This paper has examined the characteristics of housing quality and its health implications in Lokoja, a medium sized city in the north central part of Nigeria. The findings reveal that more than sixty percent of the inhabitants of city live in undignified houses. A large proportion of the households sampled in the study area indicated that they are less accessible to portable water. Further analysis revealed that more than 23% of the household interviewed indicated that they use pit toilets in their houses. Another 17.2% of the respondents claimed that they defecate in uncompleted buildings and river channels in the city. The study recommends that sanitary facilities and portable water should be provided to the residents who live in the high density area in Lokoja particularly at Agwan Fulani, Kabawa, Karaworo and Adankolo. There is need to provide low cost housing scheme for people who live in Lokoja. The paper concludes that better housing quality is a responsibility of all and sundry. Thus, the

local, state and Federal government should salvage this situation as this would enable the masses to live in a decent accommodation and make residents less vulnerable to contagious diseases in their neighborhood.

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