

# **INTERNATIONAL JOURNAL OF INNOVATIONS IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY**

**Volume 2, Number 1, 2012**



**CENTRE FOR ADVANCED TRAINING AND RESEARCH**

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# INTERNATIONAL JOURNAL OF INNOVATIONS IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY

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AN ASSESSMENT OF THE DISPARITY IN URBAN HOUSING QUALITY IN KEFFI,  
NASARAWA STATE, NIGERIA

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ABSTRACT

*Provision of housing as part of residential environment including the physical structure has been beneficial to man as shelter. Housing has contributed to an ensured good living of all inhabitants of different classes. This research seeks to assess the Disparity in Urban Housing Quality in Keffi, Nasarawa State. In the study, a combination of secondary and primary data were collected from the study area. The secondary data were collected from the Keffi Local Government archives. The primary data collection was basically through the administration of questionnaire on socio-economic status of the residents of Keffi town. The procedure of data analysis was a multi-stage sampling process where the study area was divided into three zones: low density, medium density, and high density areas based on building density and location of the area. Based on the findings derived from the survey, Keffi was found to be a relatively sparse populated urban area. The housing quality in the area was generally poor due to poor quality of building materials used and lack of adequate drainage and waste collection system. There was no significant difference in quality of houses of the high, medium, and low density areas. Practicable recommendations were made such as the need for massive building programme, and improvement on the access of people to quality building materials at reasonable cost.*

INTRODUCTION

From earlier studies on housing and associated problems since shelter comes next after food and clothing in order of importance as one of the basic necessities of life (Mabogunje, 1973).

Urban Planning (Cataness, 1979) defined Housing in its most basic sense "as shelter", but in the modern world it serves more needs than only protecting people from the environmental hazards, it also provides spaces for a range of activities like cooking, eating, recreation, sleeping, etc. It provides a location that determines relative access to schools, jobs, parks, retail areas and other amenities. It provides a measure of relative status, as persons are judged by the quality and location of their housing. The Oxford Advanced Learner Dictionary (2009) of the Current English defined housing as "accommodation in houses" while the New Universal Library Encyclopaedia (2009) defined housing as the provision of houses, flat, hostels, and other forms of shelter and living spaces.

Viewing the above three definitions, we can see similarity in perspective. This is to say the definition of housing is the same worldwide. It is associated with provision of shelter and houses.

Housing is recognized as areas of house and is also increasingly considered to be a matter of public as well as private concern (Universal Library, 1969). This stand, coupled with the new slogan has been the source of hope for the low-income urban workers. However, low income housing programme in most cases has benefitted the wrong people, who are the top supposedly civil servants. It is common nowadays to find expensive cars parked in the garages of the low-income houses. However, where most facilities are provided such houses are seen to be private houses owned by organization and advertised to be let.

The problem of housing quality can be attributed to a combination of social, economic, demographic and technological factors. An example of this can be illustrated or seen in the present situation. There has been evidence that urban dwellings are surrounded by deplorable urban landscape with elementary amenities. This situation is getting worse due to land acquisition in some urban areas, and rapid development. In fact, undeveloped plots within the built-up areas of most cities are commonly used as conveniences. The kind of housing quality required varies with sizes and types of family, income, taste, change in family cycle and changes in the pattern of family living.

The distance of houses to each other and other buildings as well as facilities can have an impact on the amount of light, air, noise and odour in the houses and through which it affects physical and mental health. The quality of housing that has been achieved through the automation of equipment, improvements in

plumbing, heating, cooking, lighting and food storage and preparation equipment always made housing more sanitary, healthy and comfortable that greatly reduced the labour of running a house (FMW&H, 2001). The problem of urban land in some parts of the country has less effect in terms of housing quality, but that of ill-management and lack of development control. However, zoning in Nigeria is not regarded as a legal instrument for land development control within the urban limit. Zoning and sub-division regulations are two powerful land development controls in advanced countries (Sule, 1988).

A house is not a house if it does not guarantee the minimum of privacy, protection and access to essential facilities no matter its degree of aesthetic quality. Housing therefore is not only about the shell or in other words "the quality of housing reflects the status of the person in the family and in the local community" (Rod, 1977).

Housing problems in most urban areas relate not only in the inadequacy of the number of housing programmes, and it has also not paid adequate attention to quality and other aspects of housing needs. The focus of our housing programmes, particularly the low income housing has not adopted the broad interpretation of housing needs. In Nigeria, the hard fact concerning housing quality has never been taken seriously by urban development policy decision (Aina, 1990). In 1976, the Federal Ministry of National Planning commissioned a firm to conduct a comprehensive study on urban housing needs in Nigeria's urban centers, thus, the need for housing study in Keffi, Nasarawa State in Nigeria.

### **Historical Description and Location of the Study Area (Keffi Town)**

Keffi town, the headquarters of Keffi Local Government Area, was founded in the year 1802 by a Fulani cattle rearer named Mallam Abdu Zanga who came from Yan-Tumaki under former Dutsen-Ma Local Government of Katsina State. According to sources, it was during one of the Abdu Zanga's annual herds grazing from Yan-Tumaki that he decided to settle in this area and encouraged a number of Fulani cattle rearers to unite under his leadership. On Monday, 30<sup>th</sup> September, 1902, a letter was written from the Governor Lord Lugard to the then Emir of Keffi, Mallam Ibrahim Barde which contained the following conditions that real power was to lie henceforth with the British. The Emirs were required to obey all the laws of the Protectorate, especially laws against slave raiding and importation of liquor, to give the resident every assistance in the performance of his duties and to be guided by his advice in the establishment and procedure of native courts, tribute assessment and other matters as well as to obey the High Commissioner to the utmost in all matters whatsoever.

Keffi Emirate is known for its resistance against British incursion, particularly the role played by one Magaji Dan Yamusa I who saw the advent of British as an extension of British hegemony over Keffi Emirate and infiltration of western cultures on the Keffi Community. For this reason, therefore, brief skirmishes ensued between the British colonial masters and Magaji Dan Yamusa along with the Keffi Native Force. In the process, Captain Maloney the British resident to Keffi was killed and Magaji Dan Yamusa fled to the protection of Northern Emirs (Aliyu) Emir of Kano who was later on deposed by the British for honouring Magaji Dan Yamusa I. Some of the early inhabitants of the area were Gade, Yeskwa, Koro, Mada, Eggon, Gbgayi, Gwadara, Afo and host of others. Present Karu and Kokona Local Government Areas were carved out of the former Keffi Local Government Area in the years 1992 and 1996 respectively.



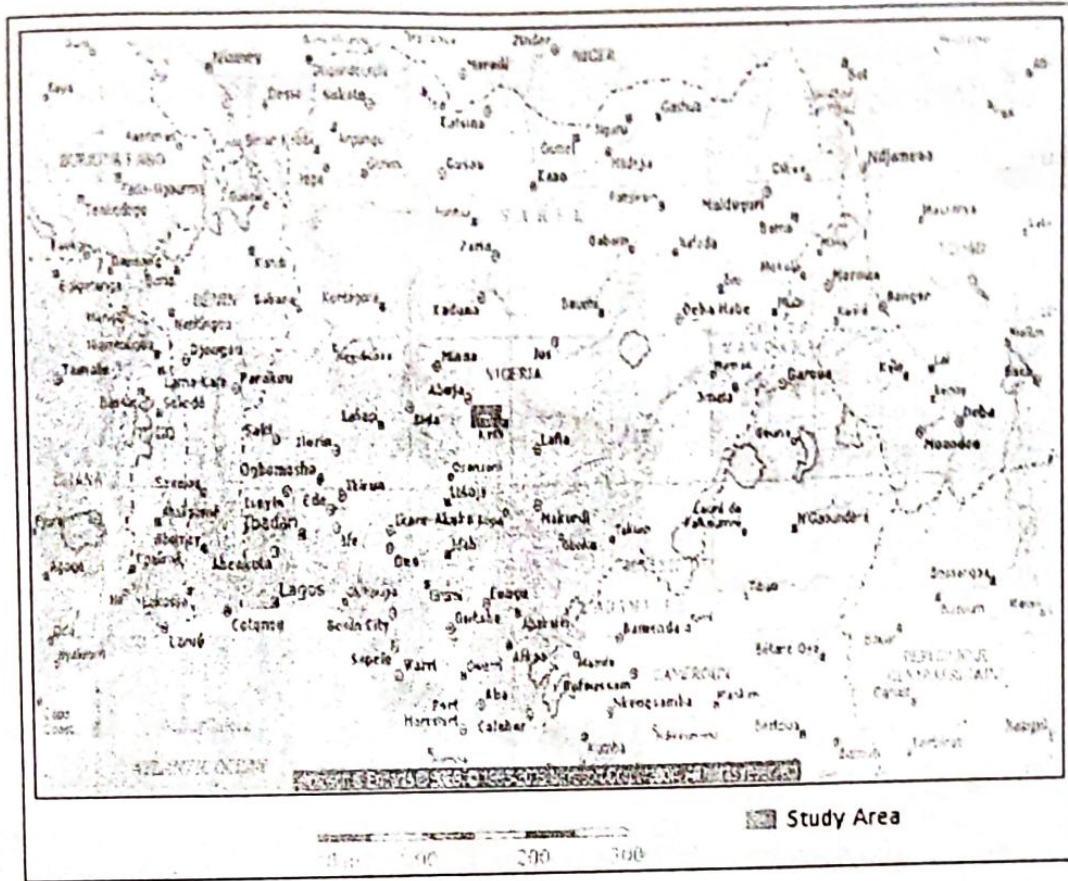


Figure 1: Map of Nigeria showing the Location of Keffi

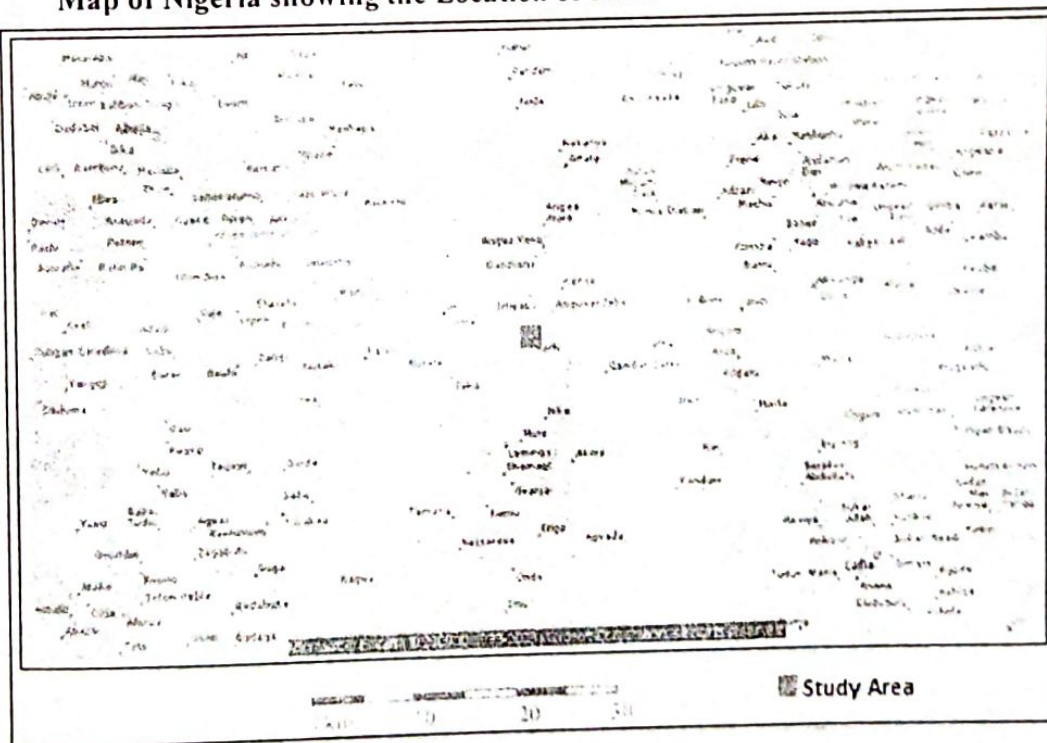


Figure 2: Map of Keffi, Nasarawa State, Nigeria

**LOCATION**

Keffi Local Government which was created in 1976 remained one of the oldest councils in Nigeria (figure 1). It shares common borders with Karu and Kokona Local Governments in the southeast and north respectively (figure 2), occupying an area of about 3,019 square kilometres. According to the 2006 National Population Census, Keffi had a total population of 85,000 people.

### MAJOR TOWNS

With the creation of Karu and Kokona Local Government Areas out of the former Keffi Local Government Area, places such as Keffi town itself, Jigwada, Gauta, Ang. Lambu, Yarkadde and Ang. Jaba are still within the vicinity of Keffi Local Government Area.

Keffi Local Government is having twelve (12) wards as follow: Tudun Kofa, Gangaren Tudu, Yara, Goriya, Iya I, Iya II, Ang. Rimi, Liman Abaji, Yelwa, Kofar Hausa, Sabon Gari, and Jigwada.

### METHODOLOGY

Two major sources of data were employed for this research and these include the primary source and the secondary source. The primary source is in the form of prepared questionnaires administered to the sampled population by the researchers. The secondary sources used were in the form of journals, other research works, pamphlets, workshops and conference papers and other relevant literature.

### SAMPLING PROCEDURES

The procedure adopted in this study was a multistage sampling process. The study area was divided into three zones namely low density, medium density, and high density area based on building density and location of the area. Listing of enumeration at the area and listing of building obtained during the 1991 Census exercise were used as a sampling frame. A total number of 15 enumeration areas were selected randomly, five enumeration areas in each zone. Finally, houses to be interviewed were selected randomly selected using systematic random sampling.

The numbers of houses selected in each of the zones were 100, 90, and 82, for high, medium and low densities, respectively. Research assistants were recruited and trained on how to administer questionnaires to the respondents. A standard questionnaire was used to collect information from respondents. Two types of questionnaires were prepared.

The first questionnaire covers a comprehensive question on housing conditions in terms of the basic facilities and quality of building materials. Questions were asked on the type of problems the occupants are facing in their houses. The second questionnaire deals with factors that determine the low housing quality production. Questions were asked on the types and sources of building financing and materials used. The target audience of the first questionnaire was the head of each selected houses, while the target audience of the second questionnaire were the landlords.

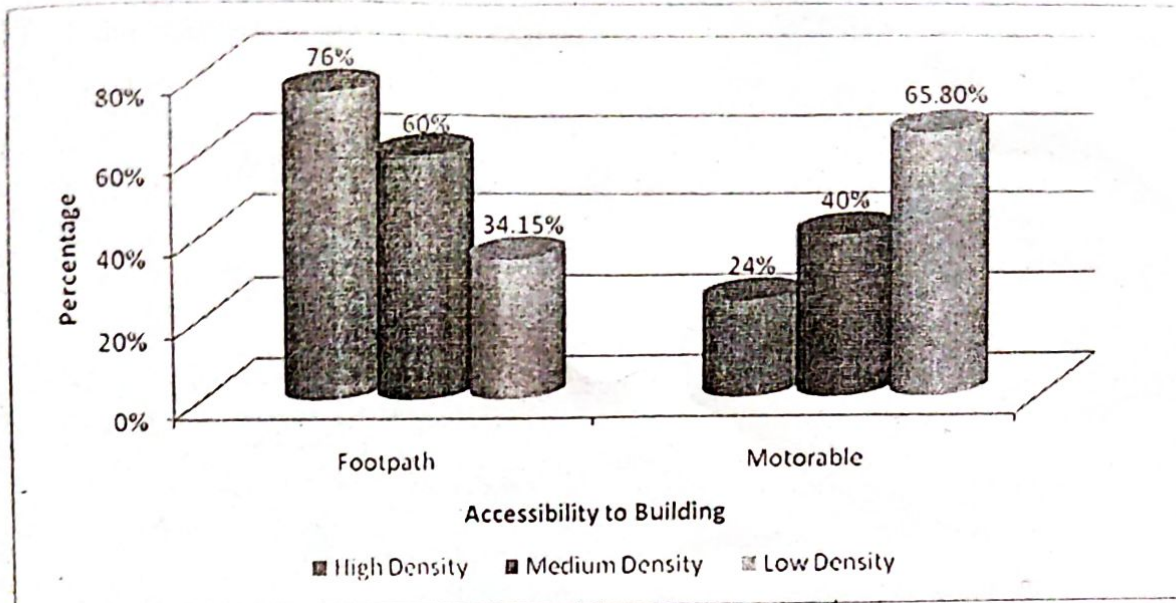
### DATA ANALYSIS

Various statistical techniques were used for the analysis. The mean, mode and percentages were among those used. The study also used Figures and percentages in the discussion of result.

### RESULTS

The analyses of the data collected from the sampled population of target audience of the questionnaires administered, include the following:

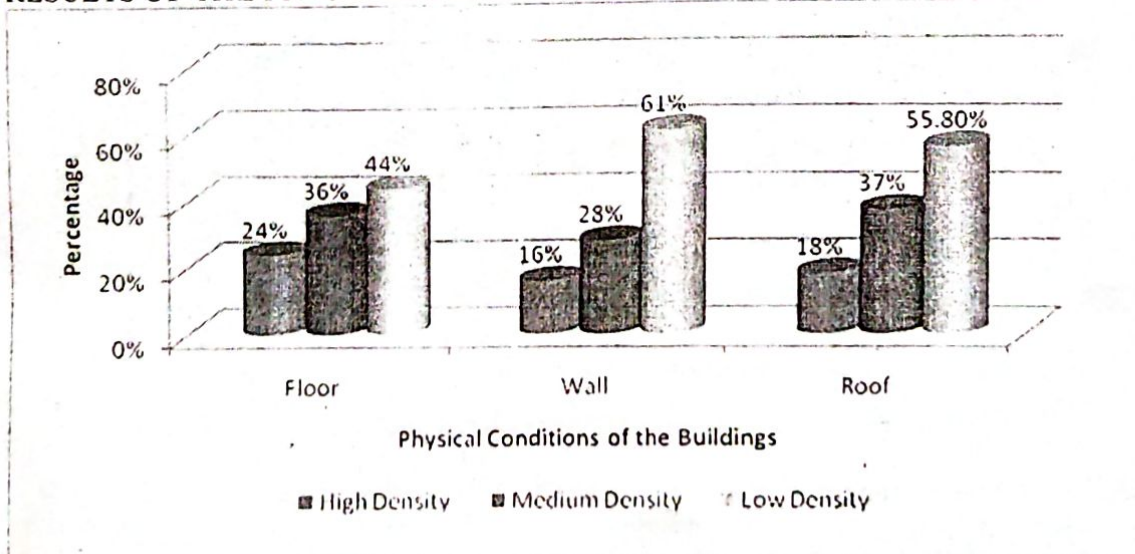
**RESULTS OF THE ACCESSIBILITY TO THE RESIDENTIAL AREAS**



**Figure 3: Accessibility to the Residential Areas**

The accessibilities to buildings are only by footpath and motorists as shown in Figure 1. Their percentage distributions in the High density, Medium density and Low density areas are also shown in this Figure. Keffi, like many other towns in Nasarawa State, is an unplanned city. The most striking feature of the city is the poor layout of the existing roads. As a result of the poorly defined street system in the town, the existing buildings are extremely crammed in space and inter-street vehicle traffic is almost impossible, most especially some areas like Akwanga road and Tsohon Kasuwa streets where the only access to buildings is through footpath. About 58% of the buildings in this study area have access road through footpath and only 42% are accessible through motorable roads (Plates III & VI). The condition of the road network is not encouraging either with the exception of few roads and the expressway which provides access to the town from the west and south respectively. most of the roads are in poor condition. As it is expected, accessibility in the low-density area is better than the high-density area. The percentage of buildings accessible by motorable road is 65 percent compared to only 24 in the high density area.

**RESULTS OF THE PHYSICAL CONDITIONS OF THE BUILDINGS**



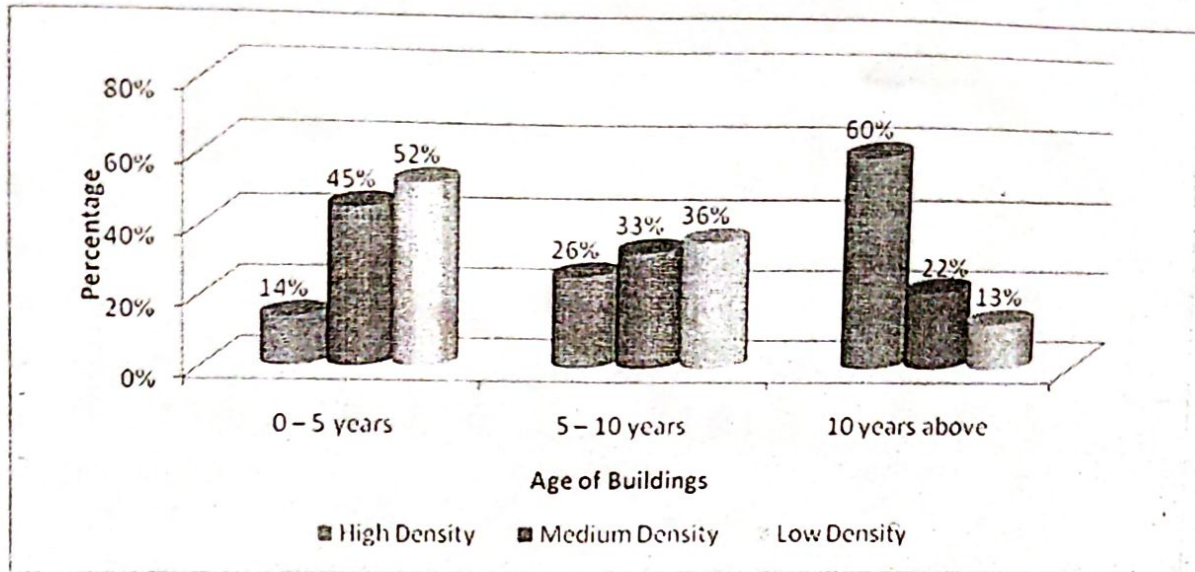
**Figure 4: Physical Conditions of the Buildings**

The conditions of the floors, walls and roofs are the physical conditions of the buildings as shown in Figure 4. It also shows the percentage distributions in the High density, Medium density and Low density areas.

## An Assessment of the Disparity in Urban Housing Quality in Keffi, Nasarawa State, Nigeria

With regards to the physical condition of the building, most houses in the study area are quite recently built (within the past 10 years) and they are still in good state only few are in bad condition either (cracking or dilapidated) houses in low density areas are slightly in a better condition than those in high density areas.

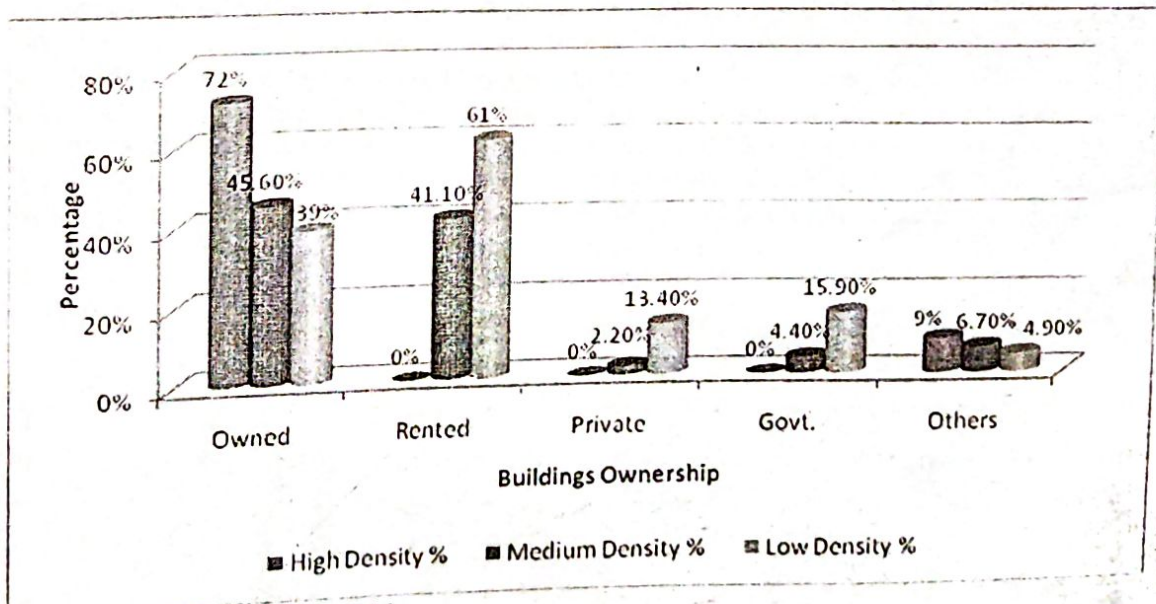
### RESULTS OF AGES OF THE BUILDINGS



**Figure 5: Age of the Buildings**

The ages of buildings shown in Figure 5 above are in the interval of 0 – 5 years, 5 – 10 years and above 10 years. Each of the percentages distribution of ages of the buildings in High density, Medium density and Low density areas are also shown in the Figure. Apart from the age of the building with 31% built 10 years and 37% less than 5 years, it shows that new buildings are springing up giving a relatively good physical condition of buildings in Keffi which is related to the fact that most of the houses (53.3%) are owned by the occupants see (Figure 6).

### RESULTS OF BUILDINGS OWNERSHIP



**Figure 6: Buildings Ownership**

The building ownership includes those Owned by the occupants, Rented, Privates, Government and other buildings. Figure 6 shows these building ownerships in the High density, Medium density and Low density areas each with their percentage distributions. It is expected that maintenance by owner is higher than by tenants, with 72% ownership in the high density areas and just 39% in the low density areas.

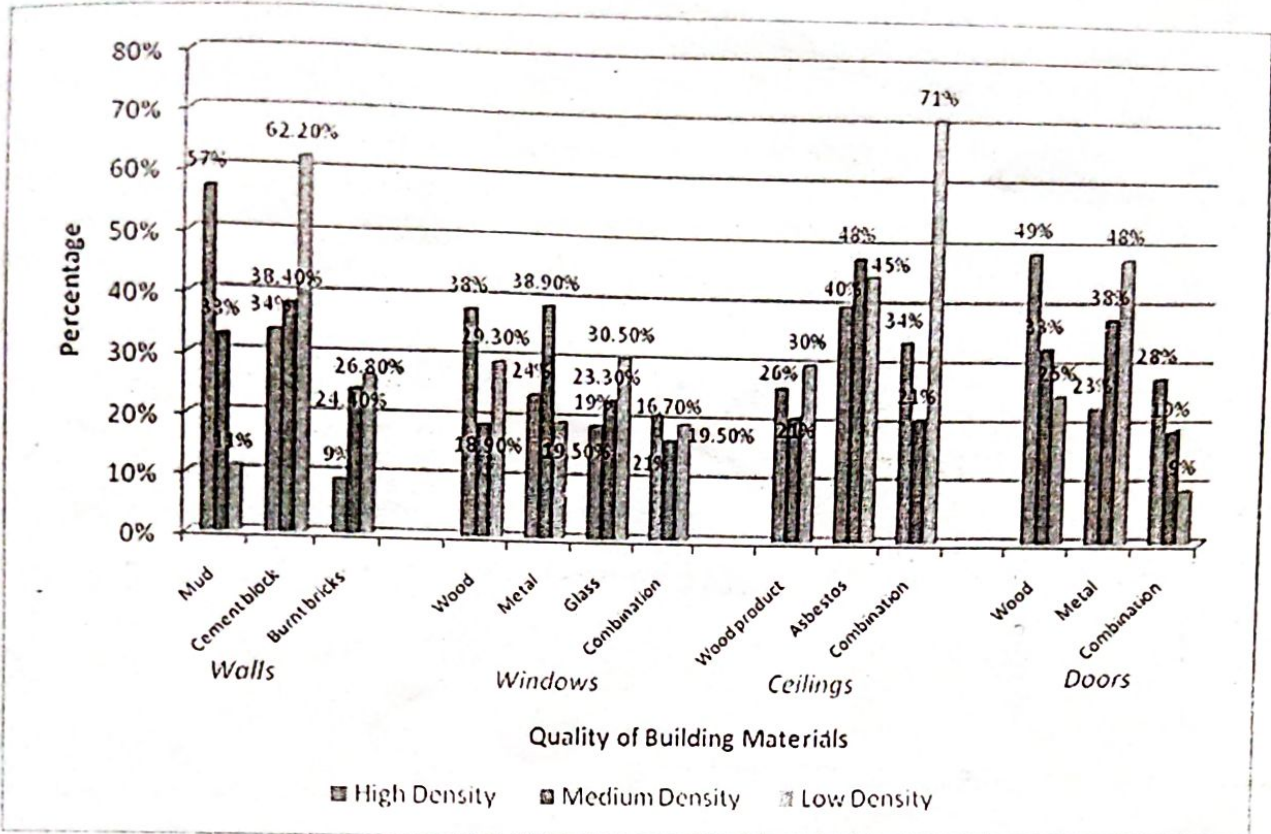


Figure 7: Quality of Building Materials

The material of buildings include Walls: which are the mud, cement or burnt bricks; Windows: which are wood, metals, glasses or combinations; Ceilings: which are of wooding product, asbestos or combinations; and Doors: which are wood, metals or combinations. The percentage distribution in High density, Medium density and Low density areas are shown in Figure 7 above. It is apparent from the findings of this study (Figure 7) that low quality of building materials is widely used with the exception of the material for ceiling in which asbestos (48.9%) is commonly used in low, medium and high density areas, while other building materials for wall, doors, and windows are of low quality. However, cement blocks are equally important accounted for about (45.2%) of the total sampled. The use of cement blocks is more apparent in the low-density area than in the high-density area. Wood is the common material used for windows and doors. There is significant difference in the quality of materials for windows and doors between the low and high-density areas.

**RESULTS OF SOURCES OF WATER SUPPLY**

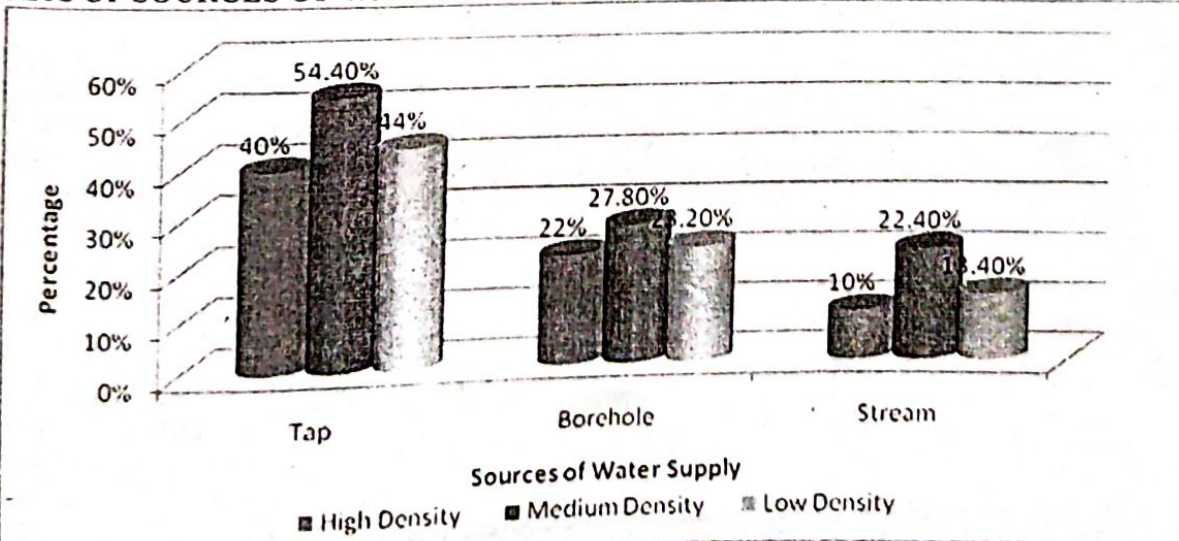


Figure 8: Sources of Water Supply

## An Assessment of the Disparity in Urban Housing Quality in Keffi, Nasarawa State, Nigeria

The sources of water supply include taps, streams and boreholes supplies. Figure 8 also shows the percentage distribution of water supply in High density, Medium density and Low density areas of Keffi Local Government Council, Nasarawa State. The survey revealed that there are not many changes in the provision of housing facilities in the study area. In most cases, majority of the urban residents rely on public pipe borne water supply and others have to share as their houses do not have internal water tap. However, it was observed that, there was no residential area that has less than 40 percent (Figure 8) of its houses supplied with pipe-borne water. The reason here could be the introduction of water rate, which might have discouraged people who could not pay for the rate, instead they prefer public pipe-borne water supply or wells (Plate II).

### RESULTS OF SOURCES OF POWER SUPPLY

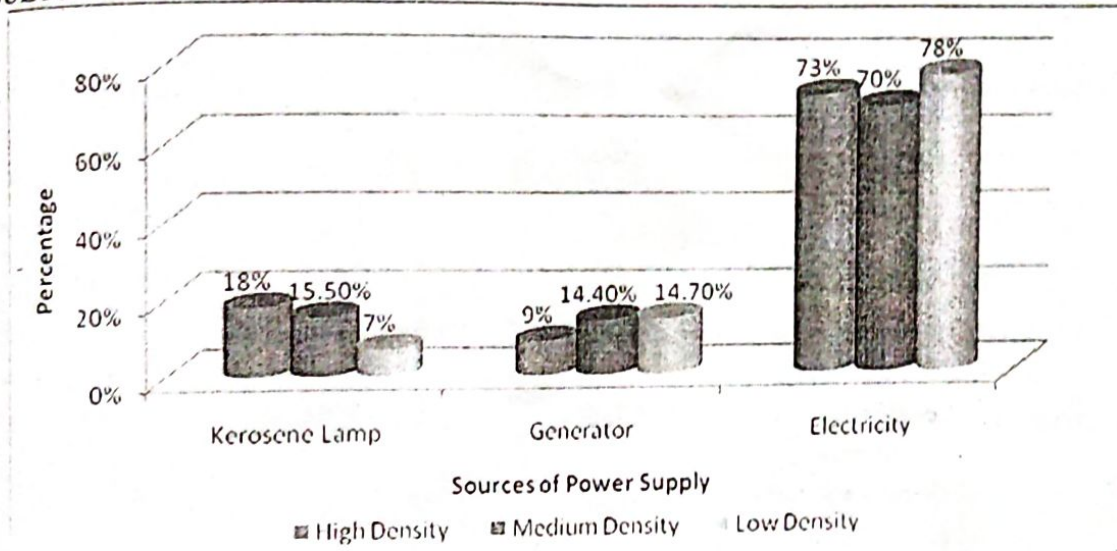


Figure 9: Sources of Power Supply

The sources of power supply include kerosene lamps, generators and electricity supply as shown in Figure 9. The Figure also shows the percentage distribution of water supply in High density, Medium density and Low density areas of Keffi Local Government Council, Nasarawa State. Although Keffi is still experiencing frequent power interruption, most of the houses in Keffi rely heavily on electricity as source of power. Similarly, the supply of electricity had become epileptic in most houses in the study area. About 70% of houses in the study area have electricity (Figure 9). However, 60% of the sampled houses have electricity supply because the electricity is supplied from the national grid.

### RESULTS OF PROVISION OF TOILET FACILITIES

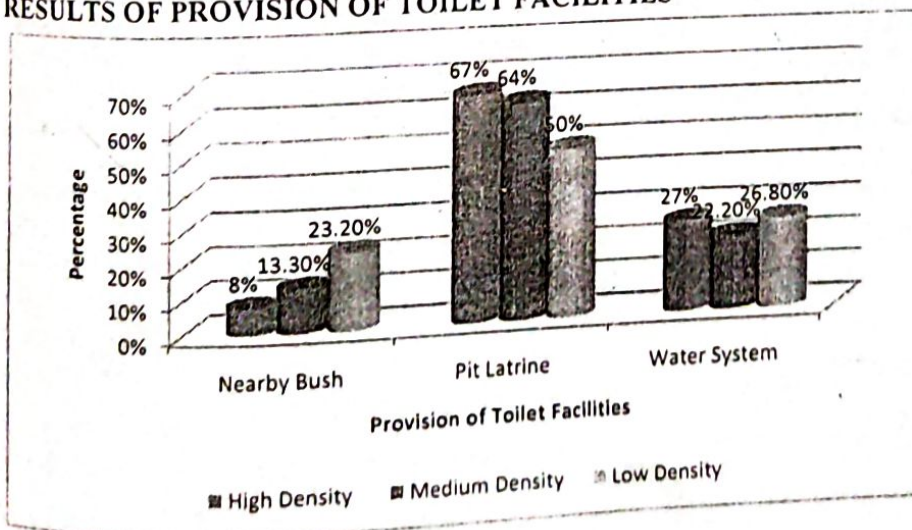
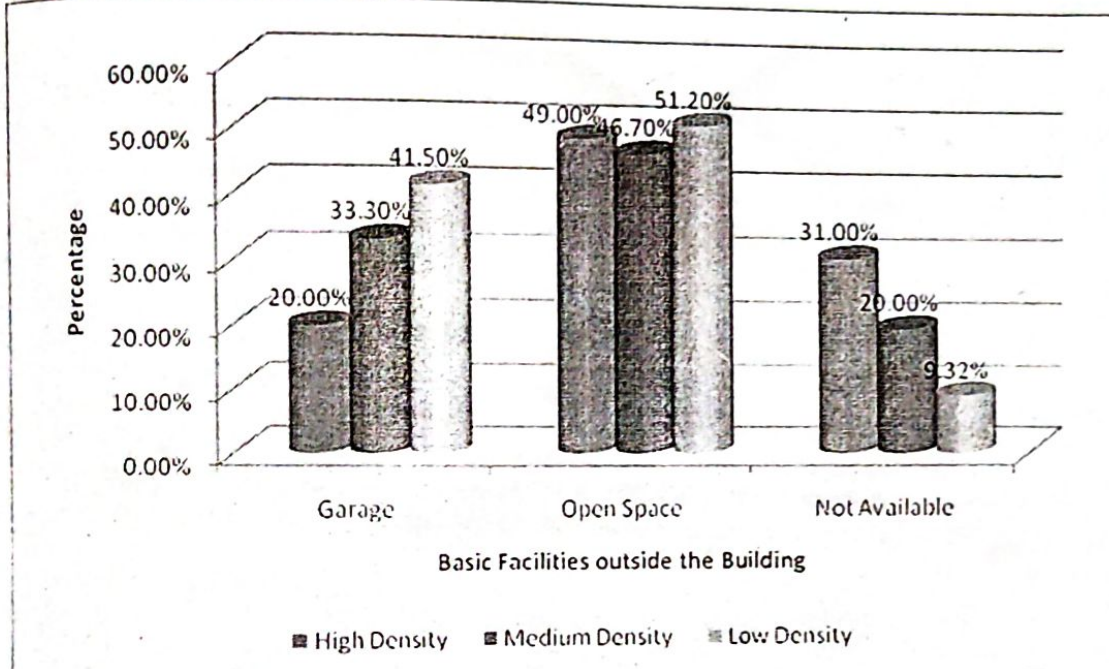


Figure 10: Provision of Toilet Facilities

The toilet facilities are the nearby bush, pit latrine and water closet whose percentage distributions in the High density, Medium density and Low density are shown in Figure 10. The situation with regards to the provision of toilet facilities is less encouraging. Only about one quarter (25.4%) of the houses in the sampled area are provided with water system. Majority of the houses use pit latrines (61%). The use of pit latrines is common in the high and medium density areas. It is however, to be noted that even in the low-density area, there are still found houses which neither have pit neither latrines nor water system facilities. This implies that the quality of houses in Keffi with respect to the provision of toilet facilities is still very poor (Figure 10).

**Results of Provision of Parking Facilities**



**Figure 11: Basic Facilities outside the Building**

The parking facilities were shown in Figure 11 which include the Garage, Open Space and Not Available. Their respective percentage distributions in the High density, Medium density and Low density are shown in this Figure. Among the various facilities in the study areas which are grossly inadequate and inefficient are this Figure. It is clear from the findings of the study that has the drainage system and waste collection system. Many road surfaces and building foundations have been partially exceptions even in the town as a whole. Many road surfaces and unchannelled storm-water which has seriously washed away due to menacing effect of uncontrolled and unchannelled storm-water which has seriously affected the quality and durability of the concerned roads and building and in addition causing major flooding and public health problems such streets like Karofi Street (Plate I). An observation of the study area shows that most of the residential houses have no proper parking facilities or spaces due to unplanned nature of the study area. However, almost half of the houses in the sampled areas have no garage provision, they still have an open space which can be used as parking facilities. Only 20% of the houses do not have parking facilities at all with worse case in the high density areas (Figure 11).

An Assessment of the Disparity in Urban Housing Quality in Keffi, Nasarawa State, Nigeria  
 Results of the Provision of Drainage System

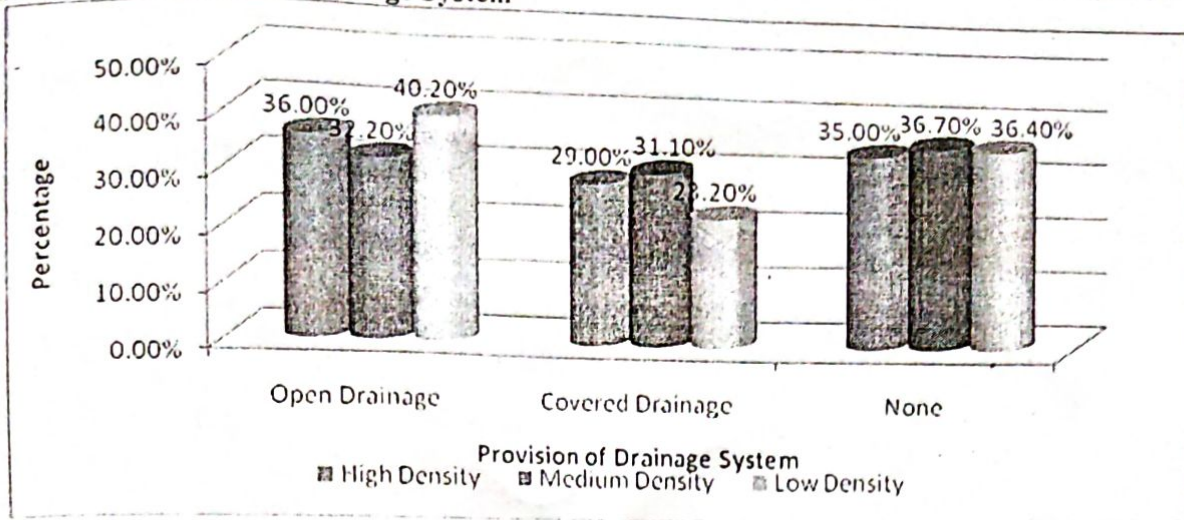


Figure 12: Provision of Drainage System

The Open drainage, Covered drainage and None drainage are the drainage systems in Keffi Local Government as shown in Figure 12. It also shows the percentage distributions of the drainage systems in the High density, Medium density and Low density areas. Roads within the town especially those that provide access to the inner part of the town remained dilapidated and many of them are found to have been damaged by erosion due to inadequate drainage facilities and the little that remain are in most cases partially blocked by fences in some residential buildings. It is however surprising in Figure 12 that the percentages of houses with open drainage in the low density area (40.24%) is higher than those in the high and medium density respectively. The reason that could be advanced for this is because the topography of Zango, Angwan Waje are undulating with the result that there is no arrangement for the provisions of covered drainage system to enhance or channel the flood about 33.1% of the study area has no drainages. The low density area has some defined open drainages that are unattended to as such it gets blocked by fallen dead leaves (Plate V).

Results of Waste Collection Systems

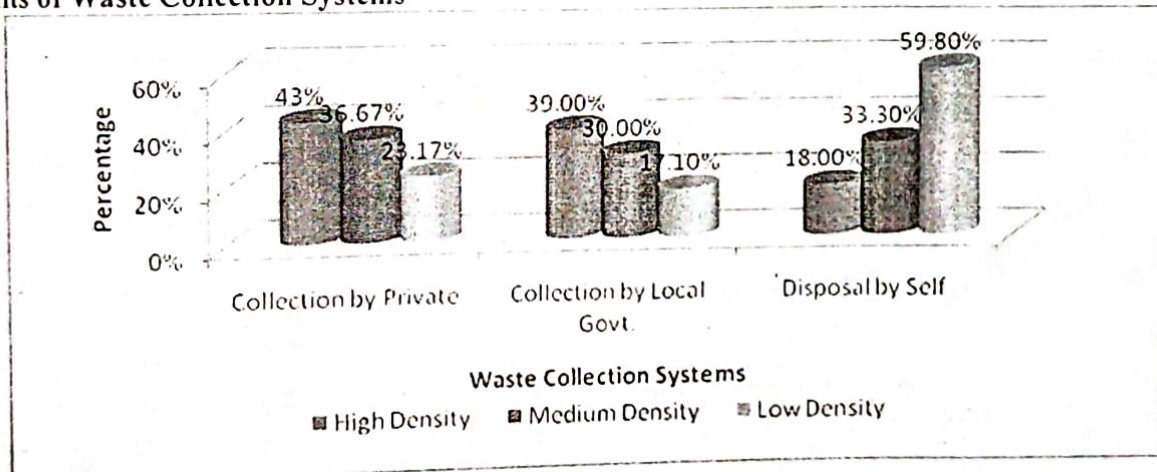


Figure 13: Waste Collection Systems

Figure 13 shows the methods of collection of waste water which includes collection by Private, collection by Government and Disposal by Self. It also shows the percentage distributions of these methods of collection of waste water in the High density, Medium density and Low density areas. Majority of the residents in of waste water in the High density, Medium density and Low density areas. Majority of the residents in Keffi area “make private arrangements for the disposal of household waste” (see Figure 12). Generally, residents in the high-density areas enjoy waste collection service from their local governments more than their counterparts in the low-density areas. In general, the level of sanitation in the town is very low. There is no doubt that since the number of houses within improper attention for waste collection is very low as is no doubt that since the number of houses with frequency of waste collection will also be very low. Most of the residents such the number of houses with frequency of waste collection does not exist at all in their environment, and even where it existed, the reported that refuse collection does not exist at all in their environment, and even where it existed, the services were made only once in a month. In terms of waste collection, Keffi is virtually lacking because majority of the population do not enjoy waste collection service from their local government. Only 29% of houses in the study area enjoy such services.



Results of Frequencies of Waste Collection

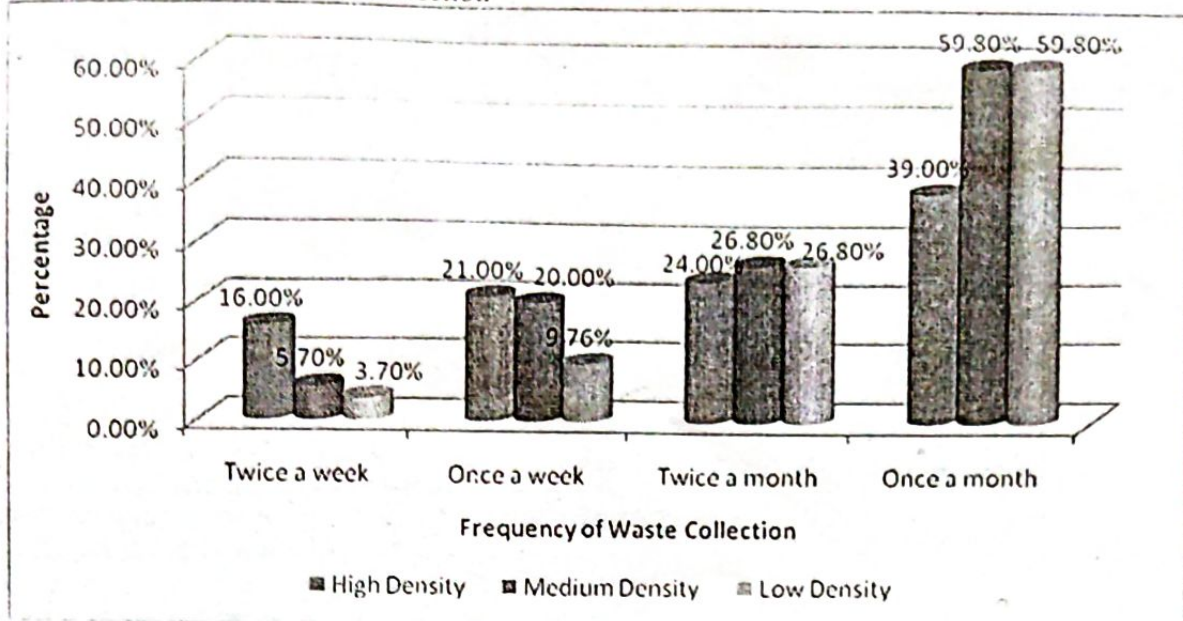


Figure 14: Frequency of Waste Collection

The frequencies of waste collection are twice a week, once a week, twice and once a month as shown in Figure 14. The percentages of these frequencies in the High density, Medium density and Low density areas are also shown in this Figure. Figure 14 shows that the frequency of waste collection is more in the high-density areas. The percentage of houses with frequency of waste collection of once a week is 16% in high-density areas as contrasted to only 3.6% in the low-density areas. Similarly, the percentage of houses with frequency of waste collection of once a month is 39% in the high-density areas as compared to 59% in the low-density areas.

Results of the Sources of Finance

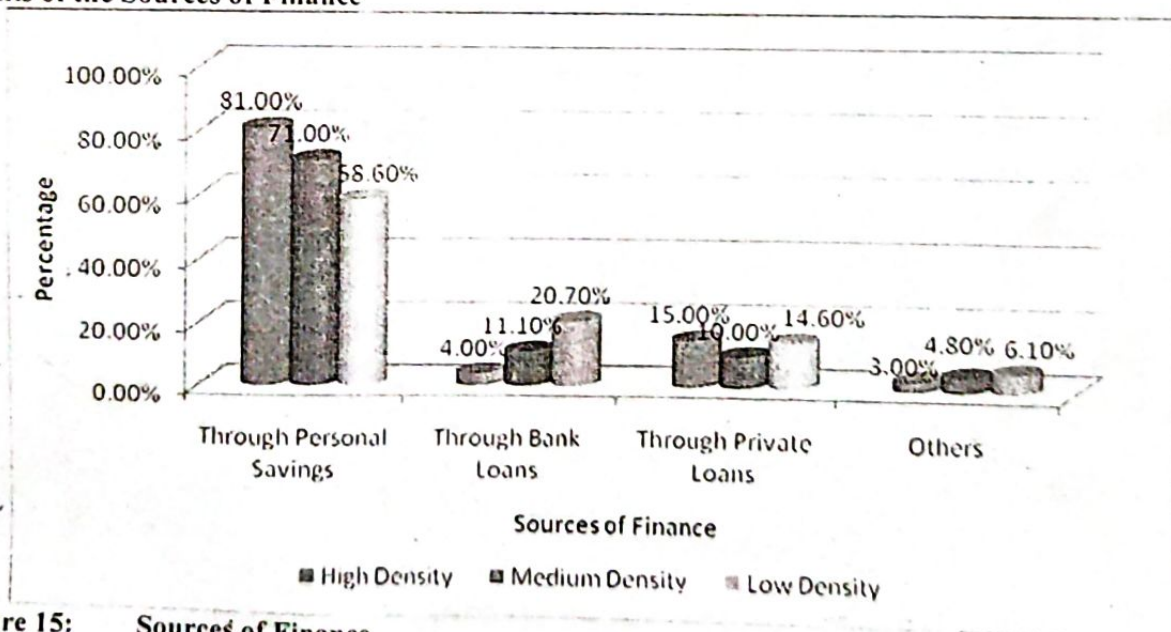
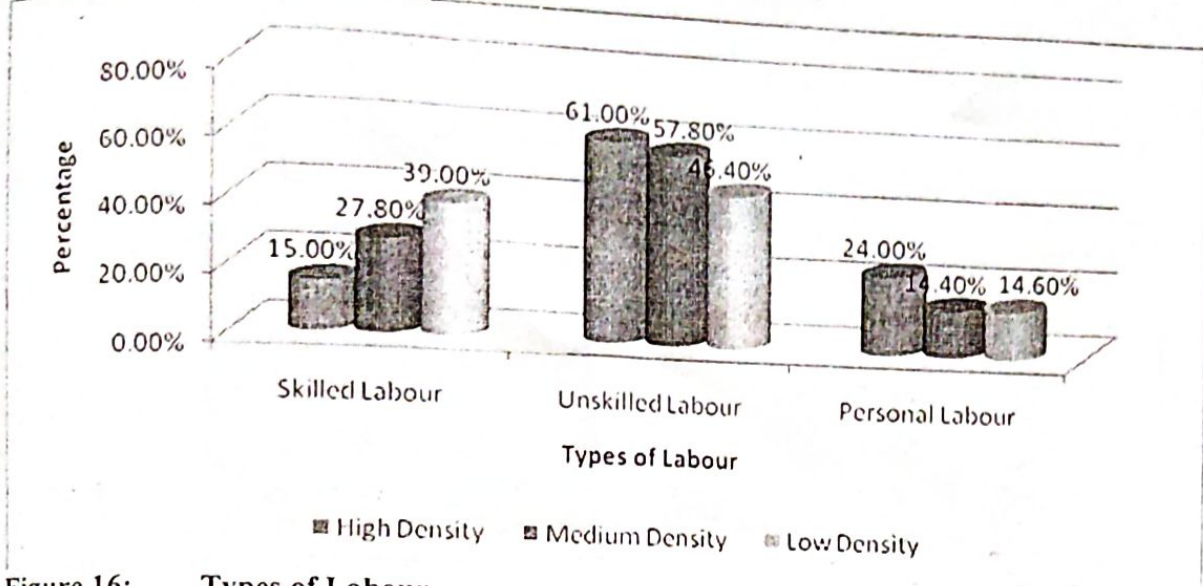


Figure 15: Sources of Finance

The source of finance includes personal savings, bank loans, private loans and others. Their percentage distributions in the High density, Medium density and Low density areas as shown in Figure 15. The result of this survey shows that (70.9%) over two-thirds of the total sample depend on their personal savings (Figure 15). Source of funding through bank loans is very low in the high density area (4%). The reason that could be attributed to this is on the grounds of interest and finance. It was however also found out that

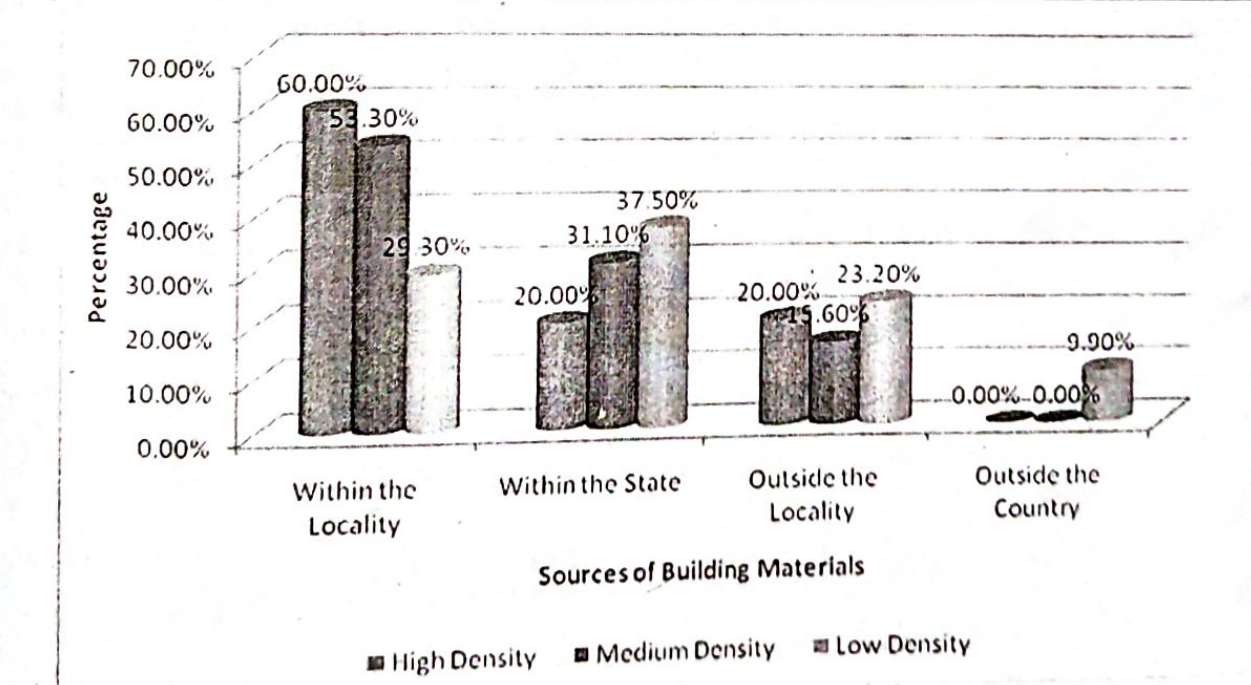
**Results of Types of Labour**



**Figure 16: Types of Labour**

The types of labours in the High density, Medium density and Low density areas are the skilled labour, unskilled labour and personal labour. Their personal distributions along these areas are as shown in Figure 16. In terms of the labour used in the construction of building, Figure 16 shows that most people no longer prefer skilled labour to build houses, instead they use unskilled workers. The cursory observation of the houses sampled in the periphery of the town indicates that unskilled workers were prominent. At least, 56.3% of the total sample depends on unskilled labour compared to 26.42% from the total sample, while only 18.08% from the total sample built their houses by themselves.

**Results of the Sources of Building Materials**



**Figure 17: Sources of Building Materials**

Figure 17 shows the sources of building materials which include those within the Locality, within the State, outside the Locality and outside the Country. Their percentage distributions are also shown in this Figure. With the result of this study (Figure 17), it is glaring that majority of the people (47.9%) prefer materials obtained locally. Only 2.94% of the houses surveyed used imported building materials. This could be due to the high cost of imported building materials. Most houses in the high-density area (60% of them) and

53.3% in the medium density (Plate IV) used materials which can be "obtained from Keffi vicinity as compared to only 29.3% in the low density areas which used mostly materials obtained outside Keffi. This explains why the quality of houses in the high-density area is lower in quality than those houses in the low-density areas.

### Results of the Literacy Level

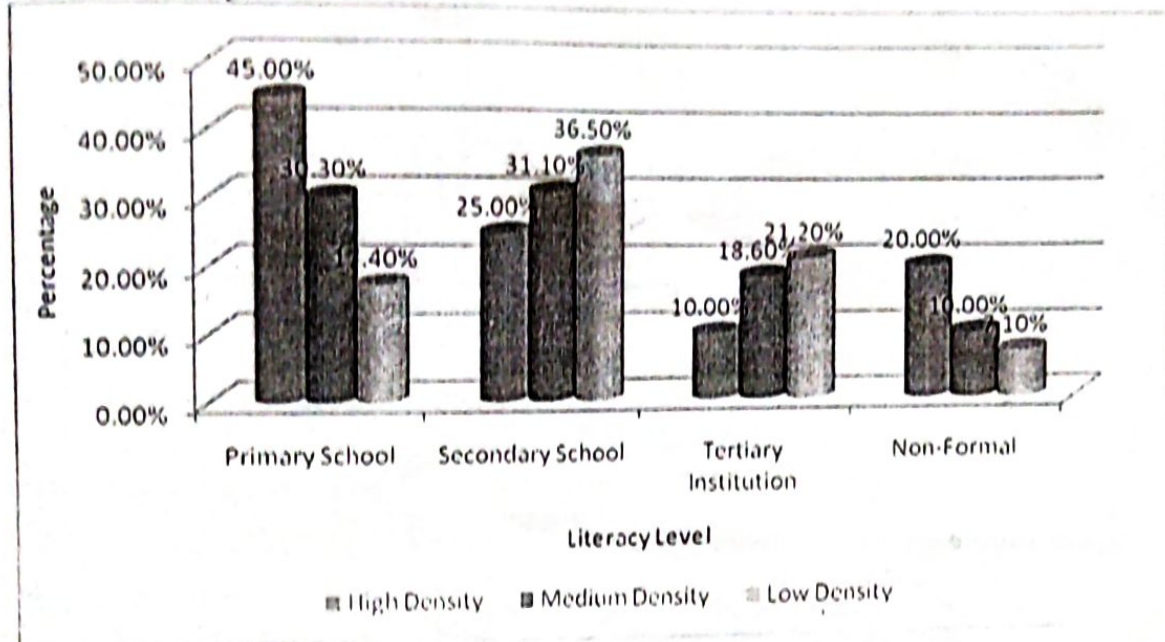


Figure 18: Literacy Level

The rate of literacy level in High density, Medium density and Low density areas are expressed in percentage distributions as shown in Figure 18. These literacy levels are the primary schools, secondary schools, tertiary institutions and non-formal level which are also shown in the Figure. The result of the study reveals that the literacy level (Figure 18) is below average most especially at the high density area which has 45% primary schools and only 10% are at tertiary levels also at the low density area tertiary institutions is only 21.2%. A lot of public schools are evenly sited in the study area and the development of private schools is concentrated in the medium and low density areas.

### Results of Income Level

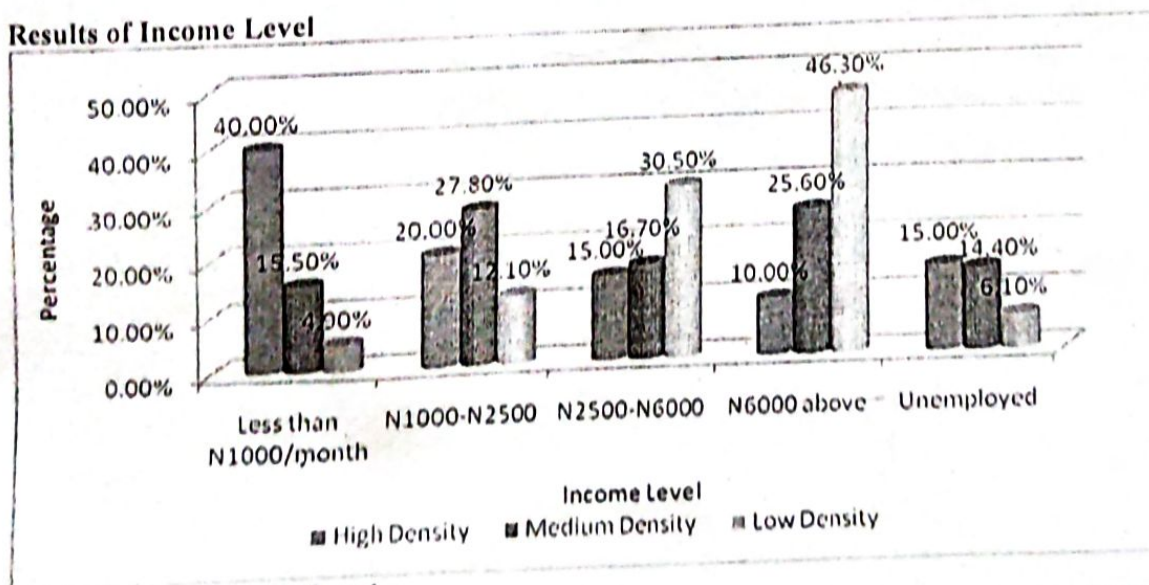


Figure 19: Income Level

The income level includes less than N1000 per month, N1000-N2500 per month, N2500-N6000 per month, above N6000 and unemployed as shown in Figure 19. The percentage distributions of these income levels in the High density, Medium density and Low density areas are also shown in the Figure. The income level

is also a major factor that determines the type of facilities that individual can afford to provide for his needs. The result from Figure 19 shows that 40% of the residents in the sampled areas in high density areas earn about ₦1000/month with an employment up to 15% only 10% earns above ₦6000. Being a local council with very little source of revenue, one could vividly see why the quality of houses is generally low.

Results of Indices of Housing Quality

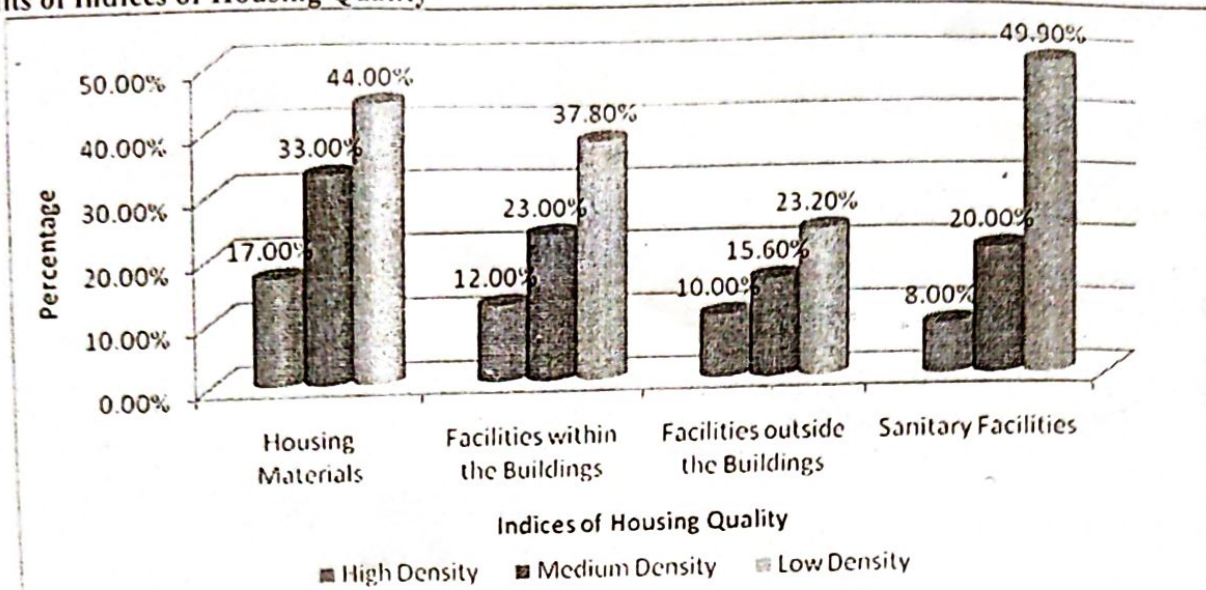
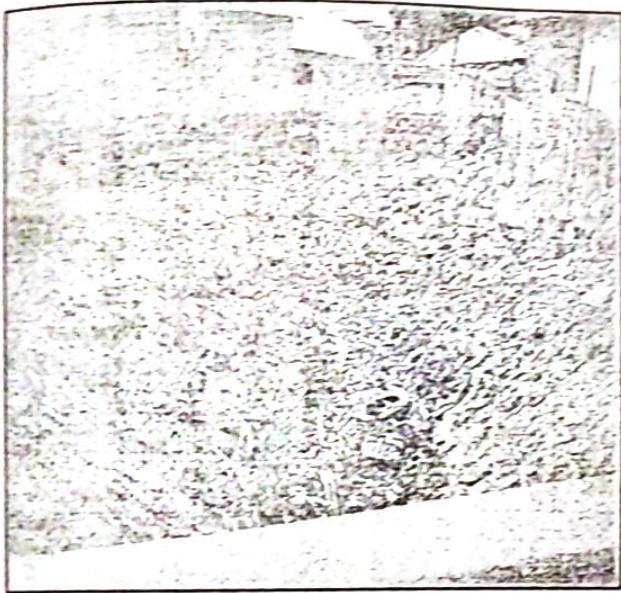


Figure 20: Comparison of Quality of Housing in Different Types of Residential Areas

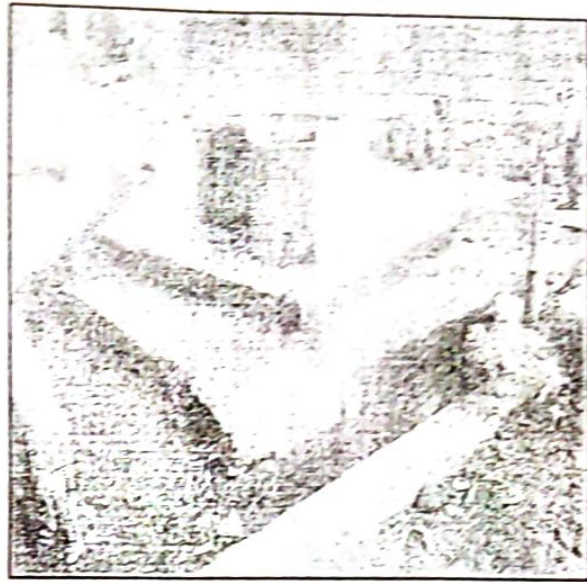
The indices include housing materials, facilities within the building, facilities outside the building and sanitary facilities as shown in Figure 20. It also shows the percentage distributions of these indices in the High density, Medium density and Low density areas. In previous sections, the qualities of housing in terms of building materials, facilities within and outside the building as well as sanitary conditions have been discussed. However, to have a general overview of the quality of housing between various types of residential areas, the qualities of material and facilities have to be taken into consideration. To achieve this objective, four indices of housing quality have been constructed which can serve as measurement of housing quality. The four indices are: Index of quality of housing material, Index of facilities within the housing, Index of facilities outside the building, and Index of sanitary facilities.

Each of these indexes is a composite index, which was constructed by adding values assigned arbitrarily according to its quality. Figure 20 shows the percent distribution of houses according to various indices of housing quality and types of residential areas. It is clear from the Figure that in general, the quality of houses in terms of their building materials and facilities are still poor. However, it is encouraging to note that about 30 to 40% of houses can be considered to have medium quality of materials and facilities. It is also apparent that there is no significant difference in the quality of houses between various types of residential areas (Figure 17).

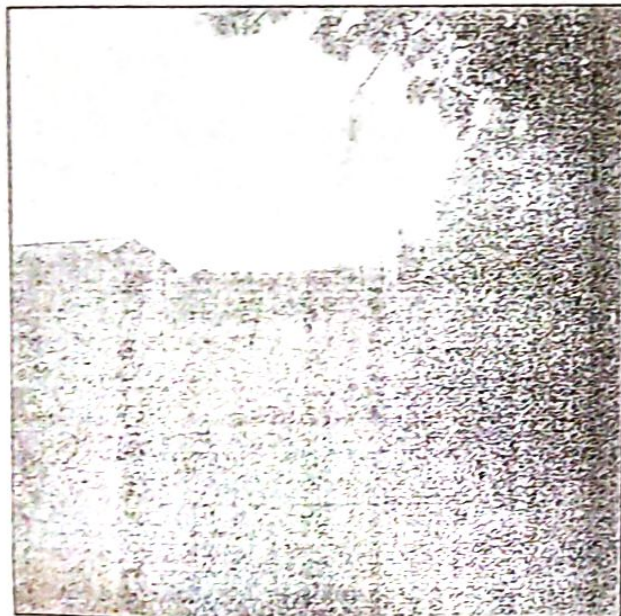
Plates 1 to 6 here



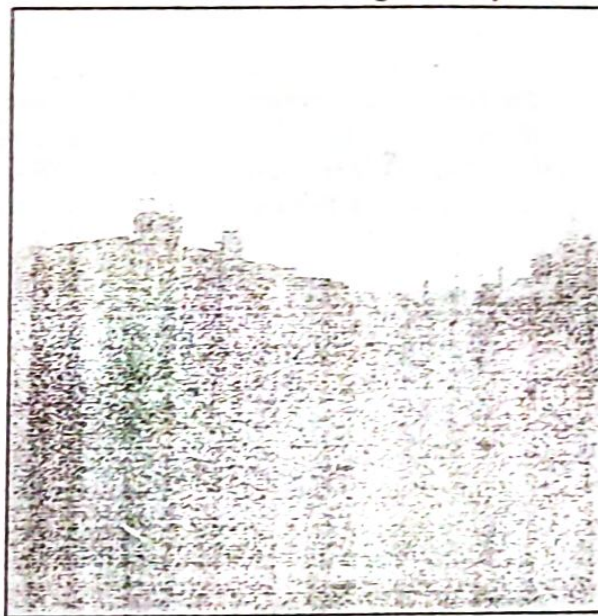
**Plate I:** Drainage Littered with Refuse at Karofi; An Area Classified as High Density



**Plate II:** A Community Well and Pipe-borne Water at Emir's Palace; An Area Classified as High Density



**Plate III:** An Untarred Motorable Access at NTA Junction; An Area Classified as Medium Density



**Plate IV:** An Ongoing Blockwork Building at Angwan Waje; An Area Classified as Medium Density

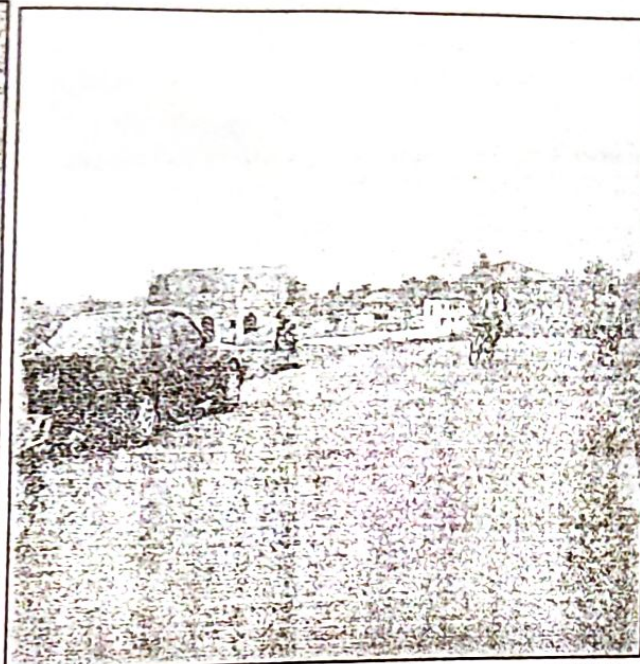


Plate V: Drainage Littered with Dry Leaves at GRA; Plate VI: Tared Motorable Access at GRA;  
An Area Classified as Low Density An Area Classified as Low Density

## CONCLUSION

Based on the findings from the survey and what has been discussed earlier, we can now know that Keffi is relatively sparsely populated urban area. The housing quality in the study area is generally poor. Generally, the findings conform with the findings of other studies to other selected Nigeria urban towns; Onibokun (1990), Sada (1975), and Prothero (1965) that low quality of building materials is widely used.

- Poor quality of building facilities is available with most houses enjoying the provision of electricity and using pipe-borne water as their source of water supply. Bathrooms and toilets also have poor facilities.
- Lack of adequate drainage and waste collection system in most of the areas. Private arrangement is made for most disposal of household waste. This is not very effective.
- The study revealed that there was no significant difference in quality of houses of the High, Medium and Low-density areas.
- The major contributing factor to the low housing quality includes difficulty in obtaining loan. The use of unskilled labour as well as cheap quality materials.

## RECOMMENDATIONS

For the fact that housing involves the consumption of neighbourhood services, the following recommendations are important:

- People complain of high cost of building materials and its maintenance; government should improve on the access of people to building materials at reasonable cost. Though the encouragement of local production of building materials, sale depots in all Local Government Areas to be sold at Government-controlled prices to members of the public.
- The policy of encouraging the construction of new buildings should be adequately complemented by a policy of encouraging people to renovate their houses and rehabilitate their neighbourhood.
- It may be advisable to reduce the cost of water cost reticulation as a deliberate policy. The use of central septic tanks and effective sewage disposal may be a factor in the reduction of indiscriminate waste disposals and attendant exposures to epidemic diseases, as the ancillary structures needed for solid waste disposal and consideration to the cost of the system.
- There is the need for a massive building programme. While the Government should not directly build houses, it should have the responsibility to take necessary steps to encourage individuals and groups who wish to undertake the dwelling unit's development.
- Government should assist in providing finance and technical skilled manpower, for the construction of the drainage pattern.

All compounds in the residential areas should be serviced by private collection of refuse waste hence feasible legislation be introduced to provide for this and charges made wither as part of a rate able system or in some other form. While vehicular accessibility is a problem in public areas such as market places, etc. the present method of communal bulk bin container-collection from accessible location on properly-constructed concrete platforms should be continued. A number of vehicles are required in order to maintain the desirable standard and more open spaces communal bin collection.

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