



Spatial Patterns of Intra-Urban Mobility and Urban Residential Choices in Makurdi town, Benue State, Nigeria

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ABSTRACT

This study examines the spatial patterns of intra-urban mobility and urban residential choices in Makurdi town. Data were collected through questionnaire survey and field observation on the various aspects of intra-urban migration related to residential choice from 328 respondents across the 20 major neighbourhoods that make up Makurdi town. Descriptive statistics were used to analyze patterns of urban residential choices in the study area. Results revealed that majority of the households' first place of residence were High-Level, followed by Wadata, Wurukum and North Bank. The study found out that 69.5% of the households have changed residences either from one neighbourhood to another or within the same neighbourhood. On the basis of the migration frequency among the neighbourhoods of the town, the result shows that High-Level ranked first with the highest frequency of 7.3%, followed by Old GRA (7%), while Naka Road (2.7%) and Court Five (1.8%) neighbourhoods were the least in ranks. With respect to the pattern and direction of residential moves between Makurdi city centre, intermediate urban and sub-urban location, the study revealed that while there were inter-sectoral movements, the majority of residential movements were intra-sectoral. The study recommended an integrated urban development approaches that will help to promote a better and healthier residential and urban environmental quality.

Key words: Intra-Urban Mobility, Spatial Patterns, Residential choices, migration, Makurdi

1. INTRODUCTION

Migration involves the change in residence over a given geographical space. It can be studied at several scales including global, regional and local or even at a defined geographical space like the city or an urban area. Intra-urban migration is one of many kinds of migration, defined in large part by movement within an area such that commuting to the same employment is still possible (Zhonghua and Xuejun 2015; Kwan and Masaki 2013). Intra-urban migration is a specific type of population movement. Population migration is non-recurrent spatial movements among communities, states, or nations and constitutes one of the three components of population change, the other two being birth and death. The notion of migration commonly means long distance relocation across jurisdictions, which is technically defined by Clark (1986) as being unable to commute to the same job under normal circumstances. In contrast, intra-urban migration is local relocation or movement that allows continued commuting (Ibrahim-Adedeji 2013; Oderinwale, 2011; Adedeji, 2007).

One of the classical attempts to describe mobility and the subsequent choice of a residential premise in developing countries was the John Turner's intra-urban migration model in the early 1960's, which was based on migrants' mobility in Lima, a Latin American city (Amao and Ilesanmi, 2013). Amao and Ilesanmi (2013) explained the relationship between urban growth, residential mobility, social and economic status; and subsequent location of low-income migrants. The Turner model of migration posited that most Latin American migrants moved into rental or shared accommodation on their first arrival into the city (Hampton and Charles, 2006). The newly arrived migrants, whom he called 'bridge-headers' first moved into cheap centrally located rental property in proximity of unskilled employment opportunities. After some years they become established in the city with regular, stable jobs and a young family and so moved out of the overcrowded central locations and settled on the urban periphery where they built a house of their own (self-help ownership). Another migrant category of the model was that of the 'status seekers' (middle-income) who gave priority to amenities rather than to location or tenure as in the other categories. Status seekers would either improve their dwelling to reflect their changing employment, income and family status or move into government housing after having acquired a salaried job. The model reflected the choices of migrants in the 1950's and 1960's. However over the years government policy and urban dynamics have changed the housing opportunities that would have otherwise been available at the city centre for example saturation, high rent prices, growing commercial district and development of informal settlements in the urban periphery.

In Nigeria, every time of the year there is a gradual movement of people who change their place of residence through intra-urban migration. Since this process is continuous, cumulative residential moves in the country can cause dislocations in infrastructural provision and other social and economic problems in a town (Umar, Onoh & Okereke 2021). This information indicate that, at least in terms of consumer demand, there is a strong potential for rapid shifts in housing and residential demand patterns and perhaps equal potential for slowing or even reversing the trend of urban development if

movement of people in places is not complemented with urban development (Owoicho and Ogwuche, 2018; Akinwumi, 2017; Omole, 2010). Makurdi town where this study is situated is rapidly experiencing urban growth (Hemba, Enoch, Orimoleye & Dam, 2017; Iorliam & Dam, 2017), and has several identifiable residential areas defined operationally as a division of the town or region comprised of several dwellings which are in close proximity and are fairly homogenous in terms of sociology, typology and culture. Such neighbourhoods include Wadata, Wurukum, Judges Quarters, North Bank, GRAs and other parts of Makurdi. The individuals that make decisions about neighbourhoods to live in depend on their preference of these neighbourhoods which in turn is related to the patterns of intra-urban mobility and residential choices. This study set out to determine the patterns of intra-urban mobility and urban residential choices in Makurdi Town, Benue State, Nigeria.

2. MATERIALS AND METHODS

2.1 The Study Area

Makurdi town is located between latitudes $7^{\circ} 30'$ and $7^{\circ} 45'N$ and longitudes $8^{\circ} 30'$ and $8^{\circ} 35'E$ situated on the plains of the River Benue (Fig.1). The river divides the town broadly into North and South Banks. The south bank forms significant part of the town because this is where the provincial headquarters was located and later state headquarters in 1976 (Nyagba, 1995). Makurdi is drained by tributaries of the river Benue which forms the main artery of drainage in the whole of the trough. What is today known as Makurdi has been in existence as early as 1912 (Ortserga, 1982). At this time, it was a typically small river settlement which composed of scattered Tiv compounds and Jukun settlements at the river banks. The settlement was then known as Lobi. Other sources however date Makurdi as far back as the 15th Century (Ortserga, 1982). Whether Makurdi started at that time or later, by 1912, it was already in existence as a small river settlement. Colonisation had a special impact on the devolvement of Makurdi town. During this time, Makurdi became a very important river port and a centre of river trade.

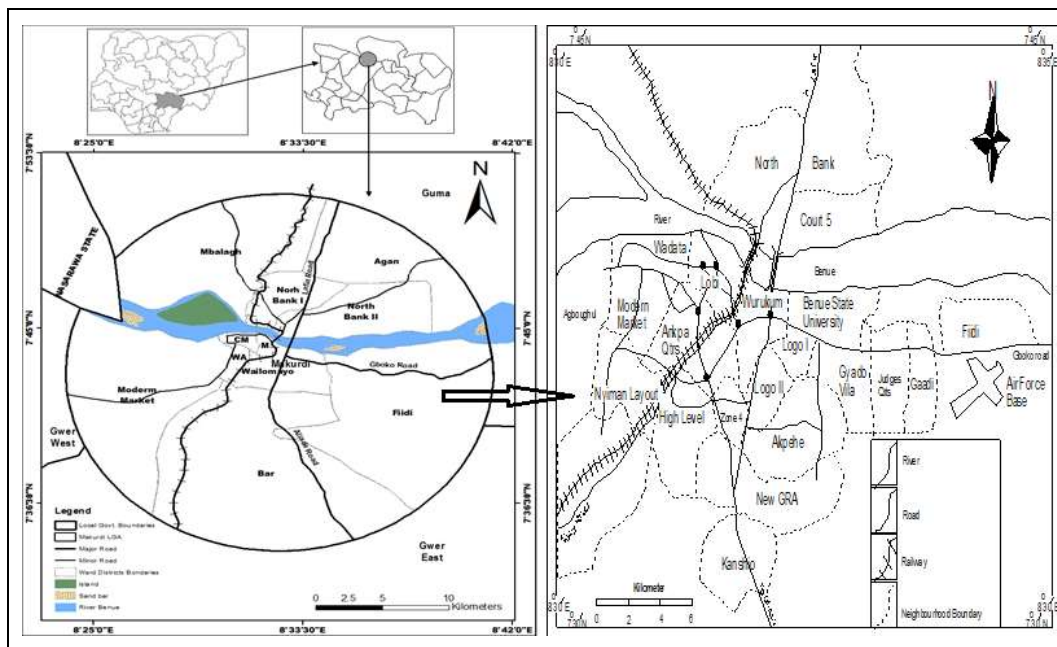


Fig. 1. Makurdi town showing neighbourhoods

Source: Benue State Ministry of Lands and Survey, 2023

Local agricultural products like beniseed, soya beans and cotton were shipped from Makurdi to Port-Harcourt for export. It was a point from where imported manufactured goods were distributed to the hinterland. This attracted a sizeable migrant population to the settlement. People migrated into the settlement to participate in the trade activities at the time. This development brought Makurdi settlement in contact with the outside world generally and Western Europe particularly. Secondly, colonialism impacted on Makurdi settlement through the construction of the railway and the railway bridge. The railway line from Port- Harcourt to the northern parts of the country reached Makurdi in 1922 and “a Train ferry was established in 1923 to link the southern head of the railway with the northern head from Jos over river Benue” (Tesco Kozti Consulting Engineers, 1977). With the arrival of the railway, Makurdi became accessible both by land and water.

The population of Makurdi town is projected from 2006 census figure to be 391,924 people as at 2016 (Tser, 2013). Makurdi town has many neighbourhoods. Some of these neighbourhoods are as old as the town itself, while others are relatively new. The very old neighbourhoods in the town include Wadata, Wurukum, Old GRA and North bank. The moderately old neighbourhoods include High level, Ankpa Quarters, Kwararafa Quarters, Lobi Quarters, Court Five Area and New GRA, and the new neighbourhoods include Agboughul, Gyado Villa, Judges Quarters, Kanshio, LogoI, Logo II, Naka Road, Nyiman Layout and Police Zone 4. The town is served by two Federal High ways; the Lafia – Makurdi - Otukpo and the Makurdi – Gboko highways. The portion of the Makurdi – Gboko highway that traverses the town has been dualized and it connects neighbourhoods along its path such

Wurukum, Gyado Villa, Judges Quarters and Gaadi. The Lafia – Makurdi - Otukpo highway on the other hand has not been dualized (except on top of the new bridge) and it connects neighbourhoods such as North bank, Court 5, Wurukum, New GRA and Kanshio. Other major roads within the study area include the Iyorchia Ayu way and Old Otukpo road that connects Wurukum roundabout to High Level Roundabout and further connects High Level roundabout with the New otukpo road at New GRA, the newly completed Makurdi International market Road, the Makurdi – Naka road, the Old Bridge road and Abu King Shuluwa road. These roads are in various usable conditions and they connect all the neighbourhoods in the town. They are complimented by numerous streets which altogether give form and structure to the city layout. Most of these roads have a number of road infrastructures such as street lights, directional signs, gutters and pedestrian walkways. There exists five operational markets within the town namely; Makurdi Modern market, Wurukum, North Bank, High Level and Fiidi markets.

Other important facilities include Security, Schools, Health Care Centres, and Worship centres, Fire Services, Restaurants and Banks. In terms of security, there is a high concentration of public security formations within the vicinity of the town. Public safety is generally maintained by the various police divisions whose presence has been established as well as the Security and Civil Defence Corps. There is also the presence of various military formations such as the Nigerian Army School of Military Engineering, NASME, 72 Army Para Battalion, Tactical Air Command Headquarters and the Nigerian Navy Provost School. In terms of education, the town is host to two public Universities and other tertiary institutions. There are also lots of public and private primary and secondary schools spread across the various neighbourhoods. Health wise, the town also has a Teaching hospital and several primary and secondary health care centres. For fire service, there is a single unit of Fire Bridgade which is the Headquarters of the Benue State Fire service stationed near Lobi quarters in Makurdi. All the registered banks in Nigeria have atleast one branch in Makurdi, most of which are found along the Makurdi-Otukpo road with a few others located in Makurdi Modern Market, High Level, Kwararafa Quarter and North bank. There is also the currency centre of the Central Bank of Nigeria which confers higher status to the branches of all the banks operating in Makurdi town. Public water supply is erratic and has limited coverage in parts of Old GRA, high Level, Kwararafa Quarters, Lobi Quarters, Wurukum, Judges Quarters, North Bank and Court 5. All of the aforementioned socio-economic activities have effects on intra-urban migration and residential choices in the study area.

2.2 Methodology

This study is based on mix research method to examine the patterns of urban residential choices in Makurdi town. Since existing data on residential choice in the study area was lacking, so a Stated Preference Survey of the heads of households was conducted. Specifically, information was obtained on six variables; the first place of residence, the neighbourhood households changed to, number of times households change residence (residential mobility), socio-economic status of households (such as income, occupational and educational status), nature of dwelling units (whether flat, duplex, self-contain, new or old houses) and absence of natural disasters (eroded or floodable areas, disease prone). The sources of data for this study have been the heads of households resident in the various neighbourhoods in Makurdi town. The heads of households provided the data for this study because they are decision makers when it comes to critical issues involving the households like the choice of residences. A household survey was conducted using respondent's questionnaire.

The study population is made up of all household units within Makurdi town. Households constituted the basic units of study across the various neighbourhoods that make up Makurdi town. There are 38,777 households estimated to be living in Makurdi (projected from 1991 NPC census figures). The 1991 census household's figures were used. From the study population of 38,777 households, a sample size of 400 was selected for study. The sample size of 400 households was determined using the Taro Yamane (1967) formula in his *Elementary Sampling Theory* for finite population which is expressed as follows:

$$n = \frac{N}{1+N(e)^2}$$

Population size of 400 respondents was selected out of the total of 38,777 household units that constituted Makurdi town (see Table 3.1). This is in agreement of works of Ahmed (1995) who studied urban residential choice in Bahawalpur in Pakistan, a town with an estimated population of 227,260 people, population of similar size with Makurdi which has a population of 193,870 people. Gyimah (2001) in his study of residential choice in Accra Ghana has also used the formula to arrive at a similar sample population.

Table 1: Study population across Neighbourhoods in Makurdi town

S/N	Neighbourhood	No. of EAs	No. of Households Selected
1	Wadata	152	67
2	Highlevel	120	53
3	Wurukum	105	49
4	Logo I	24	10
5	Logo II	58	21
6	Old GRA	08	4

7	New GRA	20	9
8	Kanshio	88	43
9	Nyiman	06	2
10	Kwararafa Quarters	08	3
11	Lobi Quarters area	14	6
12	Police Zone 4	28	13
13	Gyado Villa area	18	9
14	Modern Market	12	5
15	North Bank	148	65
16	Court 5 area	15	7
17	Ankpa Quarters	08	4
18	Agboughul	25	11
19	Naka road	12	5
20	Judges Quarters	22	10
Total		896	400

Source: Modified from NPC 2006

The households sample size of 400 statistically determined from the Taro Yamene formula at $p < 0.05$ was then divided proportionately to the number of Enumeration Areas (EAs) in the 20 neighbourhoods for the purpose of questionnaire administration using the following formula;

$$t = \frac{n}{N} \times \frac{S}{I}$$

Where,

$$t = \text{Number of household selected}$$

$$n = \text{Number of enumeration areas per each neighbourhood}$$

$$N = \text{Total number of enumeration areas in Makurdi town}$$

$$S = \text{Sample size of 400 from Taro Yamane formula}$$

Proportionate sampling is a variant of stratified sampling (Bordens and Abbott, 2008). Instead of selecting sample of equal size from different strata, the proportion of subjects (in this case household) in the population (neighbourhood) was reflected in the sample. The Neighbourhoods constituted the strata from which households were randomly selected. The table of random numbers was used to select households on the streets for each residential neighbourhood covered in the study. These constituted the houses from which heads of households were studied. In a situation where more than one household were living in any of the houses selected, random sampling was further used to select the household to be studied.

Copies of the questionnaire were distributed to these residential neighbourhoods on the basis of the number of the census enumeration areas. The data obtained from the questionnaire were collated, coded, analysed and the results were presented in tables summarised in frequencies and percentages. The patterns of urban residential choices was basically analysed with descriptive statistics using Statistical Product for Service Solutions (SPSS) Version 20.

3. RESULTS AND DISCUSSIONS

In as much as the people choose to stay in some of the neighbourhoods in Makurdi town, they equally admitted relocating from one neighbourhood to the other. Data gathered on people's residence in Makurdi town shows that 69.5% of the respondents confirmed to have changed their residence while 30.5% did not change (Table 2).

Table 2: Intra-urban migration in Makurdi town

Neighbourhoods	Yes	No
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Agboughul	1	10
Ankpa Quarters	9	1
Court 5	0	1
Gyado Villa	9	7
High-Level	68	8
Judges Quarters	0	1
Kanshio	6	5
Kwararafa Quarters	4	5
Lobi Quarters	5	6
Logo I	7	7
Logo II	8	6
Moedern Market	5	5
Naka Road	3	2
New GRA	1	4
North Bank	21	6
Nyiman Layout	2	2
Old GRA	7	5
Police Zone 4	1	4
Wadata	40	11
Wurukum	31	4
Total	228(69.5%)	100(30.5%)

Source: Fieldwork, 2020

The result revealed that 33.5% of the people have changed residence from one neighbourhood to the other only once. This is followed by 21.3% who have changed residence twice and 11%, three times respectively. This notwithstanding, 4.2% of the respondents have changed residence at least four times while, a significant number of respondents (29.8%) did not specify the number of times they have changed residence despite an earlier indication that they have changed residence. These findings although supports what Gyimah (2001) study reports that majority of Accra residents sampled (about 95 percent) have changed residence since moving to Accra with a median of two moves. This suggests that migrants tend to be very mobile in their early years in the city in search of a preferred neighborhood but become more stabilized with length of stay.

Table 3: Number of times respondents changed residence in Makurdi

Neighbourhoods	Once	Twice	Three Times	Four times	Unspecified	Total
Agboughul	0	1	0	0	5	6
Ankpa Quarters	2	4	1	0	1	8
Court 5	0	0	0	0	1	1
Gyado Villa	1	3	1	0	3	8
High-Level	27	10	7	3	4	51
Judges Quarters	0	0	0	0	1	1
Kanshio	2	2	0	1	5	10
Kwararafa Quarters	4	1	0	0	4	9
Lobi Quarters	1	1	3	0	3	8

Logo I	4	2	0	0	4	10
Logo II	4	2	1	0	5	12
Moedern Market	3	0	1	0	5	9
Naka Road	2	1	0	0	2	5
New GRA	1	0	0	0	2	3
North Bank	3	7	3	0	7	20
Nyiman Layout	1	1	1	0	1	4
Old GRA	2	3	2	0	5	12
Police Zone 4	1	0	0	0	2	3
Wadata	12	5	2	6	6	31
Wurukum	6	6	3	0	2	17
Total	76(33.5)	49(21.5)	25(11)	10(4.2)	68(29.8)	228(100)

Source: Fieldwork, 2020

With respect to the pattern and direction of residential moves between Makurdi city centre, intermediate urban and sub-urban location, the study revealed that while there were inter sectoral movements, the majority of residential movements were intra sectoral. Because of the relative availability of land for housing in the sub-urban location, those who desire home ownership often get attracted here. This finding is similar to what Gyimah (2001) study reports about the direction of residential movement in Accra, was found that majority of movements were intra-sectoral, although different trajectories were observed for renters and home owners.

The information on the migration of the people out of their neighbourhoods to another was also obtained and presented on Table 4.

Table 4: Household out-migration in Makurdi from 1976-2010

Neighbourhoods	Frequency	Percentage %	Ranking
High-Level	24	7.3	1
Old GRA	23	7.0	2
North Bank	20	6.1	3
Wadata	20	6.1	3
Logo I	19	5.8	5
Logo II	19	5.8	5
Modern Market	18	5.5	7
Wurukum	18	5.5	7
New GRA	17	5.2	8
Ankpa Quarters	16	4.9	9
Gyado Villa	16	4.9	9
Judges Quarters	15	4.6	9
Lobi Quarter	16	4.9	9
Nyiman Layout	15	4.6	9
Police Zone 4	15	4.6	9
Agboughul	14	4.3	11
Kanshio	14	4.3	11
Kwararafa Quarters	14	4.3	11

GV	0	0	0	0	1	0	1	0	1	1	0	0	7	2	1	1	0	0	0	1	16
MM	0	0	0	0	0	0	0	0	1	1	0	0	0	5	0	0	3	0	0	0	10
ANQ	0	0	0	0	0	0	0	0	0	1	1	0	2	2	0	0	1	2	1	10	
AG	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	10	0	0	0	0	11
NR	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	2	0	0	0	5
NB	0	2	0	0	2	3	1	1	2	1	0	0	1	3	2	0	1	6	1	1	27
C5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
JQ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL	20	24	18	19	19	23	17	14	15	14	16	15	16	18	16	14	9	20	6	1	328
AL																				5	

Source: Fieldwork, 2020

Note that:

WD-Wadata; **N/L**-Nyiman Layout; **NR**-Naka Road; **H/L**-High-Level; **KQ**-Kwararafa Quarters; **NB**-North Bank; **WR**-Wurukum; **LQ**-Lobi Quarters; **C5**-Court Five; **LG1**-Logo I; **PZ4**-Police Zone4; **JUQ**- Judges Quarters; **LG2**-Logo II; **GY**-Gyado Villa; **0**-Did not change residence; **GR**-Old GRA; **MM**-Modern Market; **NGR**-New GRA; **ANQ**-Ankpa Quarters; **KS**-Kanshio; **AG**-Agboughul.

Related to the issue of residence intra and inter residential migration among the neighbourhoods, the study also investigated the factors that push the people out of their initial place of residence to other neighbourhoods within Makurdi town. The major factors that were likely to determine out-migration across the 20 neighbourhoods in this study area and their mean loading and standard of variation have been analysed further to determine their strength of loading and factorial dimensions in Table 6.

Table 6: Variables that facilitate intra-urban migration in Makurdi town

Variables	Description	Mean	Std. Deviation
X1	Accommodation too small	3.2695	.63175
X2	Accommodation too large	3.1118	.38952
X3	Rent too high in my former place	3.1195	.58379
X4	Need to be close to a school	3.2450	.65733
X5	Need to be close to a market	2.9486	.78057
X6	Need to live in a cleaner environment	3.1925	.69536
X7	Need to have access to easy transport	3.3225	.73080
X8	Need to be close to place of work	2.7138	.36898
X9	Need to be away from a kin	2.9050	.50024
X10	Need to be close to a kin	2.5675	.38088
X11	Need to be away from a friend	3.3318	.48845
X12	Need to be close to a friend	3.0125	.66131
X13	To occupy own house	3.1883	.32684
X14	Eviction	2.7363	.30321
X15	Need to be close to health centre	3.1200	.32053
X16	Former place too noisy	3.3950	.41355
X17	Need to be close to recreation centre	2.8292	.60847

Source: Fieldwork, 2020

These factors were generated from the responses given by the respondents on the infrastructural qualities of neighbourhood that facilitated or push them out of a particular neighbourhood to another in Makurdi town. The 17 factors highlighted in Table 6 shows that many factors come into play to influence

the decision to move out of a neighbourhood within and between the cities. In the words of Simmons (1968), the decision to change residential location can be examined from several points of view. Social psychologist sees the household as acting under various kinds of stress; the economist views the move as maximizing satisfaction of the household requirements; and the human ecologist treats it as an element in a larger pattern of movements or as part of the processes of growth and succession. From any point of views, however, the decision to move is complex. It concerned, on the one hand, with the needs and values of the household, change over time, and, on the other, with the characteristics of the environment, which encompasses home, neighborhood, and alternative locations.

4. CONCLUSION AND RECOMMENDATIONS

This study examines the spatial patterns of intra-urban mobility and urban residential choices in Makurdi town and the push variables of mobility process were also identified before measures that could aid a less stressful residential relocation process were suggested. The study has contributed significantly to knowledge in a number of ways particularly as affect spatial dimension of intra-urban migration. In order to ensure a less stressful residential relocation process in the Makurdi metropolis, the study suggested that the relevant authorities should provide, rehabilitate and improve upon all existing neighbourhood infrastructural facilities in order to make the neighbourhoods more conducive to health living. The reconstruction, rehabilitation and maintenance of major and access roads within the metropolis and the surrounding satellite settlements need to be given adequate attention to ease intra-city movement.

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Spatial Preference of Urban Residential Locations