



## Residential Mobility in Enugu, Enugu State, Nigeria

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### ABSTRACT

*This study examined the Residential Mobility in Enugu, Enugu State, Nigeria. The study adopted the survey research design. Stratified, systematic as well as simple random sampling techniques were used to proportionately select the residential densities and respondents used in the study. Principal Component Analysis (PCA) and Analysis of Variance (AV) were used to test the hypotheses which stated that the predominant factors that influenced residential mobility in Enugu cannot be identified and that the factors that influence residential mobility among residents do not differ significantly across the residential densities in Enugu. The predominant factors include Security, Commercial activities, travel behavior/proximity, household lifecycle, Facilities, social status, work/personal and neighborhood characteristics. The highest factor that influenced mobility in Enugu was security, The result of the hypothesis revealed that there were significant ( $P < 0.05$ ) differences in the factors that influenced residential mobility among residents in Enugu. The policy implication of the research is Residents have equally expressed a significant preference to live closer to where they work, if opportunity is availed to them. Therefore, It becomes expedient that government housing policy should be re-oriented towards addressing the location preference of housing consumers*

**Keywords:** Residential Mobility; Enugu; Principal Component Analysis

## 1. Introduction

The structure of cities throughout the world is likely to be influenced by the pattern of the residential land use which occupies a major proportion of its total urban land use. The factors determining urban land use are the residential location choice of households which appear to be important in determining the future physical form or urban spatial structure of cities. (Theodos & Turner, 2012). Moving from one area of residence to another is one of the major events in the life of city residents. In demographic studies and urban planning, these residential shifts are referred to as "residential mobility". (Melanie & Carey, 2006). Just as housing consumption is of prime importance to an individual's well-being, so also is the process of residential location and relocation central to our understanding of urban dynamics and the changing social and spatial stratification in our cities (Gbakeji & Ojeifo, 2007). People change their dwellings for several reasons which may be social, economic and physical in nature. These reasons as noted by Freedman & kern (1997) include access to employment, business, educational, cultural or recreational opportunities and affordability. Others are familiarity with one location or type of location, perhaps as a result of growing up there; dwelling characteristics such as age, number of rooms, types of appliances or facilities available; or emotional attachment to a place or lifestyle. Other studies have shown that propensity to move is associated with a number of factors such as age, life-cycle stage, education, occupation, tenure, duration of residence, cost of rent and location relative to the center of the city. (Graif, 2012). These factors have frequently been found to discriminate 'movers' from 'stayers'. Other reasons include realtors' involvement in the search process and tendency of households to maximize expected utility (Speare, 1974; Olatubara, 2008).

Mobility and migration have always been of great interest to spatial demographers, because it is the mechanism whereby the character of social areas is maintained or changed (Clark 2006). Residential mobility has been acknowledged as a major force shaping the social geography of the city. The decision of individuals and households whether to move and where to move coupled with housing opportunities and costs are the major forces that bring about differentiation of wealthy from poor neighborhoods, family type neighborhood from those comprising of young and elderly, and neighborhood growing from declining school age population ( Limon, 2010) Several studies by Olatubara (2008), Umar & Oduwole (2017) and Limon (2010) carried out a research in some parts of the world and in Nigeria on such aspects of residential mobility like the patterns and effects of residential mobility on the origins and destinations of movers. These studies had been substantially focused on the combined consideration of long-term household/individual choices (such as residential relocation decisions, residential location choices, housing tenure and types) with short-term travel choices. (Kim, Pagliara, & Preston, 2005 and Graif, 2012). Aba have various neighborhoods and these neighborhoods are situated in various classified residential densities. Between 2010 and 2014, there had been influx of people from other parts of the country especially from the North East region of the country to the cities in the southern parts of Nigeria. Evidently, these had been attributed to activities of the insurgents (Gbakeji & Ojeifo, 2007). Aba is known for its commercial attributes and referred to as a commercial city while Enugu is a typical administrative city

### Statement of the Research Problem

Intra-city and intercity residential mobility are common phenomenon in various neighborhoods in Nigerian cities. This type of movement is also common in Enugu which incidentally is a commercial city. The study of residential mobility and housing choices have captured the interest of scholars in a diverse range of disciplines economists, geographers, sociologists, planners, psychologists, Policy Maker to name just a few, had theorized about and researched on aspects of housing movement. The movement of households within an area is an increasingly important issue which attracted renewed research interest over the years (Ahmed, 1995; Pawson & Bramley, 2000; Oishi, 2010). Many researches were on the factors that influenced choice of residential location in some developed and developing countries. These factors were mainly categorized under the push and pull, social-cultural and demographic factors. However, in spite of the notable works in the area, many factors influencing residential mobility were still shrouded in obscurity. Little is known about residential mobility between neighborhoods based on the city's status. In the previous related studies done in Nigeria by Ozo (1986) in Benin city, Umar & Oduwole (2017) in Gbakeji and Ojeifo (2007) in Eleme, the factors that influenced residential location choice in the areas were considered without recourse as to whether the status of the area can affect the predisposing factors. There was no link between the pattern and nature of the factors that influenced residential location choices and cities' type/status. There is the need to consider these factors vis a vis the nature of the area. This is lacking in the growing body of literature. Furthermore, no empirical study had been carried out on the factors that influenced residential location choice among the residents on the different residential densities in the urban areas. Interestingly, most urban areas of the country have various residential densities which incidentally are characterised by people of various income strata. The need to understand the factors that influenced the housing location decision of these

residential density strata cannot be over-emphasised. The knowledge of this stratification is crucial in planning for housing in cities and yet not much information is available about the pattern of residential mobility in Aba metropolis. Gbakeji & Ojeifo (2007). Most studies simply posited that income factor influenced residential location mobility Umar & Oduwole, 2017; Van, 1991; Lupala, 2002; and Kombe & Kreibich, 2005).

### **Objective of the Study**

The aim of the study is to investigate the residential mobility in Enugu metropolis, while the objectives is stated below

- I. Determine the factors that influence residential mobility in Enugu metropolis.
- II. To ascertain the extent to which each of these factors influence the residential mobility in Enugu metropolis

### **Research Question**

To achieve the above stated aim and objectives, the following research questions were posed:

- I. What are the determine factors that influence residential mobility in Enugu metropolis?
- II. To what extent does each of these factors influence the residential mobility in Enugu metropolis?

## **2. Review of Related Literature**

### **Conceptual Framework**

This section gave succinct explanations of the various classical theories and concepts that basically explain the residential mobility dynamics. These theories were comprehensively discussed, their merits and demerits highlighted. The applicability of the theories was equally discussed also. Equally, the theory on which this study was framed was also pointed out.

### **Sociologists' Life Cycle Approach**

Originated from sociology research, mobility study in the early stage assumed each social group to have a constant propensity to move, which was related to its threshold of place utility (the degree of attractiveness of an area where people were living in relative to alternative locations) (Wolpert, 1965; Brown *et al.*, 1970). The place utility threshold approach was further developed into a strain-stress model in which an individual would migrate as a form of adaptation to stress exerted by his environment (Wolpert, 1966; Speare, 1974). However, stress should not be the only predictor of mobility (Lee, 1978; Newman & Duncan, 1979; Landale & Guest, 1985). Social ties and economic opportunity also have an effect on mobility decision (Clark & Huff, 1977). Thus, intra-urban mobility has been regarded as a process of adjustment whereby one residence site is substituted for another in order to better satisfy the changing demand of a household (Brown and Longbrake, 1970). The life cycle approach proposed by Rossi (1955) has been widely adopted by researchers from different disciplines to identify the changing demand until now.

### **Economists' Housing Consumption Approach**

The economic motivations of mobility have been well studied by economists since the late of 1960s. A household's decision to move is typically placed in a partial equilibrium framework resulted from the disequilibrium in housing consumption (Quigley and Weinberg, 1977; Boehm and Ihlanfeldt, 1986). Hanushek and Quigley (1978) are among the first who attempted to model the relationships between mobility and housing consumption disequilibrium. In their model, moving decision is modeled as a function of housing demand, transaction and search costs, and the distribution of housing prices. Their findings indicate the importance of changing housing demand in affecting moving decision and searching intensity. Graves and Linneman (1979) develop a consumption model of residential choice, in which housing market disequilibrium-induced migration is modeled as a function of changes in the variables determining the demands and supplies of the non-traded goods which are location specific. The empirical tests of hypotheses stemming from this model indicates that the probability of the residential relocation is positively related to changes in the absolute value of those exogenous variables which lead to altered demands for non-traded goods. Shear (1983) extends this analysis by considering how rehabilitation affects the supply of second period housing services for a housing unit. It is concluded that non-movers value their housing services differently in their rehabilitation decisions from the movers. Therefore, it appears unlikely that the moving decisions by homeowners can be adequately explained without relating it to their rehabilitation decisions.

### Systematic Review of Related Literature

The type of people living in the community can play a key role in people's housing choices. Many past studies in housing research have shown that social stratification and homogeneity are important to residential location choices (Sirgy, Grzeskowiak & Su 2005). South and Crowder (1997) found that suburbanization is in part driven by a desire for segregation in which higher-class households will relocate to separate themselves from lower-class households (South and Crowder in Bayoh, Irwin & Haab, 2006). Lindstrom (1997), emphasized the importance of shared values and 'cultural worlds' in housing location choices. Recent empirical work continues to point to the influence of these factors. Gou & Bhat (2006), for example, showed that in the US "households tend to locate in an area with a high proportion of other households with a similar household structure and household size" (Guo & Bhat 2006). In addition, a number of studies have found that racial and ethnic factors influence residential location. Toussaint-Comeau and Rhine (2004) highlight the tendency for Hispanic immigrants in the US to locate themselves in 'ethnic enclaves.

### Accessibility to the CBD and Workplace

Alonso (1964) and Hoyts (1962) developed residential location model around a 'mono-centric' city in the 1960's. According to Phe and Wakely, 2000, the city is organized in the model in concentric circles around the Central Business District (CBD) where economic activities are located. The model assumed that all households commute to work to the CBD and therefore the choice of residential location becomes a trade-off between commuting costs and space and the price of housing. The price of housing (or the unit price of land) would decrease with increasing distance from the CBD. If a household desires more space in the suburbs for instance, it means longer distances and higher transportation costs. Living closer to the CBD means lower transportation but less housing space because of high rents. The trade-off in this case is the "costs" and bother of commuting against the advantages of cheaper land with increasing distance from the center of the city and the satisfaction of more space for living.

Evans, (1973) made some limiting assumptions, which include the fact that the urban area is a flat featureless plain and that all people worked in the CBD; all households try to minimize the costs of location by trading off rents against travelling costs and when all households try to minimize costs, the result is a definite pattern of location for different households. But Evans pointed out the possibility that in a small sized city, travel costs and distance may not be so significant and reasons for residential choice may become more complex. There have been successive improvements of the theory based on the relaxation of the assumptions or the exploration of alternative assumptions such as multi-centered cities, or the incorporation of attitudinal variables such as lifestyles, values and culture.

Richardson (1977) tries to provide a more general theory of residential location as an alternative to the 'trade-off' model. He contends that the 'trade-off' model (Alonso's) was too simplifying and did not consider houses and their availability, constraints in access to vacant land or that the peripheral location in a multi-centered city may have both access to work and more space for some households. He therefore attempted to construct a general theory that covered several variables namely: different tastes and preferences in housing, location of work and household activities, time as a scarce resource, price of land and price of the house, neighborhood and environmental characteristics, buyers versus renters, income and housing vacancies. He used mathematical equations to come up with a model, which he admits is more complicated than the standard model but what is interesting here is the necessity to explain the complexity of residential location choices by including more variables that are likely to affect the choices of individual households. The ongoing search is to find a richer model or explanation for location behavior.

Quigley (1985) and Phe & Wakely, (2000) have noted that housing choice may be more sensitive to variations in workplace accessibility than is indicated by the more restricted model of household choice as put forward by Alonso. The new sizes of the urban areas, work and shopping can no longer be concentrated in one place, there are many centers and with increasing congestions of traffic and air pollution in the developed countries, a household may not need to depend on the CBD. This is increasingly the trend in many African cities where informal service centers have shrouded supplementary services that can be found in the CBD. Phe & Wakely (2000) accounts for more recent work on proposing a new theory on the 'trade-off' model or the relationship between home and that of the work place and deserves to be mentioned. They argued that the trade-off theory does not reflect urban reality and dynamics because of its "excessive reliance on physical and measurable variables which could undergo fundamental changes during different historical times. They therefore focused on the social aspects of residential location choice rather than the economic - namely the trade-off between *housing status* social desirability attached to the housing reflected in wealth, culture, religion or environmental quality and the *dwelling quality* (the floor area, number of rooms and condition) which also has to be socially acceptable to the individual. Their model was based on the

premise that residential location patterns of most cities conform to a polar structure in which one or several poles represent the highest points of certain kinds of social status recognized by a given proportion of the population. Phe & Wakely (2000) put forward the elements of the social groups as quoted below:

1. Residential areas in cities make up largely continuous and overlapping rings around the status pole or poles. The ring pattern is the outcome of a trade-off between that desirable status and the acceptable level of a dwelling unit.
2. House value for any social group consists of two components - housing status (HS) and dwelling quality (DQ). Housing status is a combination of attributes, often non-physical, that distinguish different levels of housing desirability, or status, which are accepted by certain social groups, sometimes irrespective of the actual physical state of the dwelling. Dwelling quality embodies the physical measurable elements that constitute the basis for the normal use of the dwelling.
3. At any level of housing status, there exists an acceptable level of dwelling quality, or point, below which houses are considered substandard. This threshold divides the whole housing stock in question into two zones: the zone above the threshold is termed 'desirable'; the zone below is 'undesirable'. Each housing situation of a country or city has a uniquely characteristic threshold that can be compared with others.

### Life-cycle or Life-stage

Rossi (1980) focused on life-cycle stages as an important influence on a household's decision to move and subsequently choose a residence. The study suggested that residential mobility is "a process by which families adjust their housing to the housing needs that are generated by shifts in family size and composition that accompany life cycle changes. As the household evolves along the life course for instance from being independent from family home, marriage, having children, child rearing; the growing family is likely to express a desire for a larger house and a good neighborhood environment with schools or older shrinking families may find it more convenient to live near the city.

Clarke & Onaka (1983) in an attempt to improve Rossi's model on life cycle systematized several survey analyses of reasons for moving. Eighteen (18) different survey analyses come up with a typology of reasons for moving, and in every case, adjustment moves appeared to be prominent. The researchers stated that there is an interrelationship on reasons for moving and emphasized the role of housing adjustment in the reasons for movements. Adjustment moves they argued, included housing characteristics, neighborhood characteristics and accessibility to work, services, family and friends.

Umar & Ugwu (2015) further argued that the surveys of reasons for moving that stratify households according to lifecycle indicated housing adjustment as the most frequent reason for mobility over all age groups. However, the characteristics of housing adjustment changes over time for example, a young household finds cost, tenure and space important while a household with children is affected by size and neighborhood quality and an older household may not be affected by housing adjustment at all. The life-cycle model has also been extended to show how it relates to access to workplace as opposed to access to environmental/neighborhood amenities during the residential location choice decision.

Kim, Horner & Marans (2005) emphasized the effects through modeling techniques referring to past studies related to residential choice and work accessibility such as those of Alonso (1964) Kim *et al* (1976) argued that such studies did not consider the significant role of personal age and having children or not. So, they explored the trade-off between workplace accessibility and environmental factors in selecting residential locations at different stages of the life cycle. Using two explanations of stage in the life-cycle; Childrearing (CH) and Non-Childrearing (NCH) stages, they found that people in the NCH group especially if they are young and unmarried, select their residential location based on their job location because they place importance on their career and they are sensitive to commuting costs due to limited disposal income. People in the CH stage who have young children value residential amenities such as large gardens, school quality over accessibility to jobs.

Umar & Ugwu (2015) posited that factors such as commuting to work, individual characteristics, neighborhood preferences and environment effectuate decisions influence household residential mobility. The mobility trends appear obvious but, in a situation, where households are constrained by incomes; an expanding household may not afford to move to a bigger room or house; or households aspiring for homeownership as many do in Tanzania, may opt to live in crowded conditions rather than pay rent in bigger house for the sake of saving for a piece of land to build. Others may opt to physically transform the house for example illegal transformations in public houses.

### Neighborhood, Environment and the Community

Clarke, Duerloo & Dieleman (2006) asserted that although there is substantial work, both theoretical and empirical, on residential mobility and housing choice, the role of the neighborhood is still only partly understood in that process. Clarke *et al* studied the role of neighborhood in the residential choice process and found that neighborhood does come out independently as important in the choice process. The research studied household movements, (transition across neighborhoods') and typified different neighborhoods' that households had moved to in terms of socioeconomic status and environmental status of the neighborhoods. Environmental status was described in terms of the amount and quality of green space. The study focused on gains in neighborhood quality once the households had moved. They analyzed the nature and extent of the move between neighborhoods of different quality, and the variables, which explained successful gains in neighborhood quality, in house quality or both together.

Clarke, Duerloo & Dieleman (2000) demonstrated that apart from mobility being about improving the dwelling quality and housing consumption, neighborhoods did matter in the choice process. They found that households who had moved had deliberately made improvements in the socio-economic status of the neighborhood and the environmental quality of the area they live in without a significant gain in size of the dwelling or change in tenure from renter to occupier. While this showed the influence of a good environment, it also suggests that trade-offs can be made in terms of tenure where households need not become homeowners to improve their residential choice. (Galster & Santiago, 2006).

A review of the literature also showed that people may be attracted to a particular place because some neighborhoods provide satisfaction or dissatisfaction due to the presence or absence of good quality schools, friendliness of people, noise, crime, social interaction and community spirit. For instance, in China homebuyers are willing to pay more for reputable districts and for areas where the quality of neighborhood in terms of security, image, accessibility and convenience is high.

Umar & Ugwu (2015) There are also tendencies among particularly the middle and high income to opt for certain areas because of the perceived status. The entire neighborhood, environment can present physical and non-physical attributes that make a residential area attractive. Social factors such as the presence or absence of social interaction and community spirit emerged as important. It suggests that a household can possibly live in poor housing for the sake of supportive social interaction and community spirit as a reason for residential choice. Generally, most of the studies on residential location choices and the variables that influence the process had been done in the developed world namely Europe, Canada and the USA.

In the context of the developing world, economic models such as Alonso's can be conceivably restrictive because of local urban realities in developing countries such as: the nature of urbanization with urban poverty where governments are unable to provide housing or buildable land commensurate with demand and even when they do, it may be unaffordable to the bulk of low-income households. Increasing informal and home-based activities, where distance to work or access to the city center for employment/market outlets may not be an important location consideration. Residential opportunities available in informal settlements compared to planned ones. The informal areas facilitate households to locate to these areas, which purposefully develop close to work places, where building of own houses from various materials is possible increasing settlement densification and infilling at the cost of environmental quality to meet accommodation needs. Cultural attitudes towards land where for example in Tanzania, some tribes treat land as a sacred item (Chagga tribe), while others do not. Kironde (1995). Since theories provide a guide to understanding phenomena, it is critical that they are relevant otherwise one may misinterpret behavior.

Kironde (1992) had argued that many concepts used in today's African urban studies were transferred from the West and sometimes do not work, given the socio-cultural and value systems prevailing in African cities. Hardoy & Satterthwaite (1995) also argued about inappropriate western models that are not suited to local circumstances when they talk about housing programs. As a result, ineffective policy solutions may be advanced that compound rather than solve urban problems. The following section reviews some studies that had been carried out in developing countries, which may provide further context sensitive understanding of residential location choices.

## The Study Area

### Administrative and Geographical Location

The name Enugu came from the two Igbo words Enu and Ugwu meaning “top of the hill” or hill top, denoting the city’s hilly topography. The people of Enugu belong to the Igbo ethnic group, one of the three largest ethnic groups in Nigeria. One of the main indigenous groups of people in the area is Enugu Ngwo, who live on the hill top with their farmlands sprawling down the valley in various direction.

The origin of Enugu dates back to 1909, with the discovery and development of the coal mine. A discovery of rich seam of sub-bituminous coal was accidentally made in Udi and Okoga areas and when the survey ended in 1913, it was confirmed that extensive deposits existed in commercial quantities. Indeed, Enugu owes its origins as a significant human community to this 1909 accidental discovery. (Umar & Ugwu, 2015)

Udi mine was moved to the Ogbete area which is one of the oldest parts of Enugu. The discovery of coal deposit in the city gave rise to settlement around the foot of the hills. The city expanded into the areas of other indigenous inhabitants like Nike community. The city was initially called Enugwu Ngwo, but was later shortened to Enugu, while some villages like Ogui Nike, a layout (neighborhood) in the present-day Enugu, still retains its name.

Enugu, since 1929 had remained an administrative headquarters. It served as the capital of the Southern Provinces 1929, capital of East Provinces 1939, capital of Eastern Region 1951, capital of defunct Republic of Biafra 1966, capital of East Central States in 1970, capital of Old Anambra State in 1976 and Capital of Enugu State from 1991 till date. Umar & Ugwu (2015) The present-day Enugu urban had been a major and well known urban, coal mining and commercial center since 1915. It is referred to as the “Coal City” because of the significance of the industry for the city’s foundation and development. The immediate fortunes of the city appear to be tied among other things, with the rehabilitation of the coal industry which is presently in bad state, and citizens of the city take delight in being associated with the pseudonym of “the Coal City State”. (Enugu City, 2010).

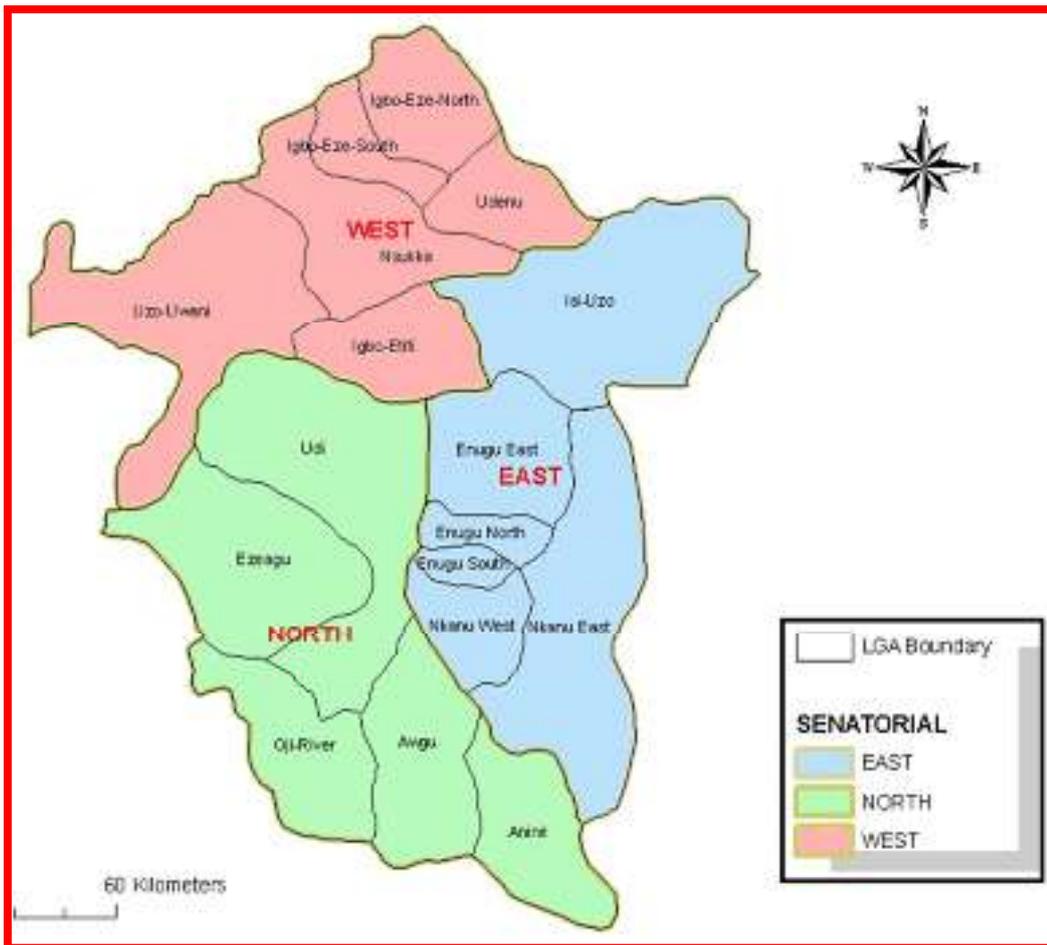
### Location and Boundaries

Enugu is the capital of Enugu State. It is located in the South-Eastern geopolitical zone of Nigeria. Enugu lies approximately between  $06^{\circ}21'0''N$  and  $06^{\circ}30'$  and between longitude  $07^{\circ}26' E$  and  $07^{\circ}37'E$ . The land area of the city is estimated at about 72.8 square kilometers. It is bounded in the East by Nkanu East Local Government Area, in the West by Udi Local Government Area, and in the South by Nkanu West Local Government Area.



Fig 1 Map of Nigeria Showing Enugu State.

Source: Ministry of Physical Planning & Urban Renewal Enugu 2021



**Fig 2 Map of Enugu State Showing the Senatorial Zones**

**Source:** Ministry of Physical Planning & Urban Renewal Enugu 2021.

### **Climate and Vegetation**

Enugu is located in a tropical rain forest zone with a derived savannah. The climate is humid and this humidity is at its highest between the months of March and November. The average daily temperature is 26.7°C (80.1°F). The weather periods are the rainy season and the dry season. Replete with heavy showers, the rainy season lasts from March to October, while the dry season of the remaining months brings a considerable reduction in rainfall. Umar & Ugwu (2015) The harmattan period is normally present between December to February of every year. The average annual rainfall in Enugu is around 2000 millimeters, which arrives intermittently and becomes very intense during the rainy season. Other weather conditions affecting the city include harmattan, a dusty trade winds lasting a few weeks in the months of December and January. Like the rest of Nigeria, Enugu is hot all year round. (Enugu State Government, 2021).

**Table 2.1 Climate Data for Enugu**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<b>Average high</b>	34	35	35	34	32	31	30	30	30	31	33	33	<b>32</b>
<b>°C (°F)</b>	(93)	(95)	(95)	(93)	(90)	(88)	(86)	(86)	(86)	(88)	(91)	(91)	<b>(90)</b>
<b>Daily mean</b>	27	29	29.5	29	27.5	27	26	26	26	26.5	27.5	26.5	<b>27</b>
<b>°C (°F)</b>	(81)	(84)	(85.1)	(84)	(81.5)	(81)	(79)	(79)	(79)	(79.7)	(81.5)	79.7)	<b>81</b>
<b>Average low</b>	20	23	24	24	23	23	22	22	22	22	22	20	<b>22</b>
<b>°C (°F)</b>	(68)	(73)	(75)	(75)	(73)	(73)	(72)	(72)	(72)	(72)	(72)	(68)	<b>(72)</b>
<b>Precipitation</b>	19	15	70	130	217	252	242	237	292	201	12	8	<b>1,695</b>
<b>Mm (inches)</b>	(0.75)	(0.59)	(2.76)	(5.12)	(8.54)	(9.92)	(9.53)	(9.33)	(11.5)	(7.91)	(0.47)	(0.31)	<b>(66.73)</b>
<b>Average Participation Days</b>	1	1	4	7	12	14	16	15	18	12	1	1	<b>102</b>
<b>Sunshine hours</b>	<b>186</b>	<b>174</b>	<b>183</b>	<b>183</b>	<b>186</b>	<b>154</b>	<b>118</b>	<b>118</b>	<b>123</b>	<b>174</b>	<b>219</b>	<b>217</b>	<b>2,034</b>

**Climate Data for Enugu**

Source: [www.enugustate.gov.ng/2021](http://www.enugustate.gov.ng/2021)

**Topography and Soil**

Enugu as indicated by name means *on top of a hill*, rather on the plains at the foot of an escarpment located in the Cross-River Basin. Enugu’s hills at the extreme may reach an elevation of 1,000 meters (3,300ft). Highlands surrounding Enugu for the most part are underlain by sandstone, while lowlands are underlain by shale. Much of the escarpment stretching from Enugu to Orlu has been ravaged by soil and gully erosion. Other geological features in Enugu include the Nike Lake where the Nike Lake Resort Hotel was built (Umar & Ugwu, 2015)

The Ekulu, Asata, Ogbete, Aria, Idaw and Iyaba rivers are the six main rivers located in the city and have all had layouts in their location named after them. Ekulu River is the largest body of water in Enugu urban and its reservoir contributes to part of the city’s domestic water supply.

Enugu soil consists of hydromorphic soil, which is mineral soil whose morphology is influenced by seasonal watery logging caused by underlying impervious shale. The soil in the city is reddish in colour. The soil profile appears to be good in load bearing and agricultural activities as well (Umar & Ugwu, 2015).

**Land Use Development Pattern**

The predominant land uses in Enugu City are residential, commercial, industrial, institutional and transportational land uses. Most of the residential areas like Ogbete, GRA, Achara Layout, Uwani, Abakpa, etc., were planned and built according to the grid-iron pattern. Secretariat in Government Reserved Area (GRA), Ogbete Main Market, Okpara Avenue, Chime Avenue and Zik Avenue are the main places for commercial activities

**Population Distribution**

Over the years, Enugu has experienced a steady increase in population mainly through rural-urban migration. Coal mining activities and extension of railway line from Port Harcourt to enable the coal be transported to the coast for export, attracted waves of migrants from the surrounding villages to the extent that in 1917, it attained a township status under Lord Lugard’s Ordinance.

The growth of the City is evident from the various population census figures from 1952 to 2006. It recorded a population of 62,764 in 1952; the 1991 Census puts the population figure at 462, 514 while the 2006 Census recorded the population of Enugu State to be 722, 664 (Umar & Ugwu, 2015).

### **Economy and Employment**

A number of populations in the area are employed by government while a greater number of people are self-employed under the informal sector activities like street trading, hawking, commercial motorcycling, artisanship etc. Economically, the urban area is predominantly an administrative area. A small proportion of the population is also engaged in manufacturing activities, with the most pronounced among them located in Enugu, Oji, Ohebedim and Nsukka. A number of populations in the area are employed by government while a greater number of people are self-employed are undertaking informal sector activities like street trading, hawking, commercial motorcycling, artisanship etc. (Umar & Ugwu, 2015).

### **3. Research Methodology**

Survey research design was adopted. Both qualitative and quantitative data collection was used. Collection of qualitative data was through oral interviews and non-participant observation, while quantitative data were collected using structured questionnaire and secondary sources such as books and journal articles. The oral interview targeted key senior member involving residential mobility. Interview was conducted based on questions drawn from prepared interview guide and recorded manually. The non-participant observation data were derived using observation schedule and photographic material during several visits made to Aba.

Due to the constraints, Residents of the metropolises were apprehensive in the release of information for security reasons and for the fear of such information being used for assessment of taxes or imposition of levies on them.

### **Research Findings**

The research showed that 72% of the respondents moved from different homes but within their present neighborhood in Enugu area. The research revealed that 20% moved from different neighborhoods but within same district or residential density in Enugu, while only 8% moved from outside the district (residential density) which meant that these categories of respondents moved from one particular residential density to another. The above is referred to as intra-neighborhood mobility and that the movement could be from low, medium to high-density areas and this is referred to as inter-residential density mobility.

The research further revealed that majority of the movement was done into the high-density areas like Abakpa and Ogui. The movement into these high-density areas had been attributed to the exodus of families from the northern part of Nigeria to attach to their relatives and these attached families usually sought homes at the high-density areas which tend to have lower rents and more affordable. According to Temkin & Rohe (1996), houses in the high-density areas were relatively cheaper and affordable. Hence, these may account for the high rate of intra-neighborhood residential mobility expressed in the high-density areas. However, the study noted that movements that were made from outside the study areas were attributed to the terrorist's insurgences in the northern part of the country. These incidences dislodged many households in the incident areas (Umar & Ugwu, 2015). The effect of this pattern of residential mobility is grave on the environment. This type of residential mobility affects not only individual families, but it changes the neighborhoods. In particular, very high residential turnover could contribute to the erosion of social control and social capital. Studies had shown a negative effect of residential turnover on a neighborhood's collective efficacy, and this loss has been linked to problems such as crime and delinquency (Morenoff, Sampson & Raudenbush, 2001; Sampson & Raudenbush, 1997). Moreover, high residential turnover promotes further mobility, which suggested the link found between residents' desire to move and the perceptions that neighborhood residents move frequently or are not "close knit" (Clark & Ledwith, 2006; Lee, Oroposa, & Kanan, 1994).

### **Residential Mobility in Enugu, South East, Nigeria**

The research revealed the predominant factors that influenced residential mobility in Enugu metropolis, the factors included quality of life, neighborhood design, travel mode, household demographics, housing tenure, family/social contacts, non-personal control and ethnic/religious factors. In Enugu metropolis (an administrative) were observed to have different variables that led for the intra-city residential mobility in them (see the table below)

**Table 3.1 Factors that Influence Intra-City Residential Mobility**

ENUGU		
Factors	Loading	Rank
Quality of life	32.7%	1 <sup>st</sup>
neighborhood design	15.4%	2 <sup>nd</sup>
travel mode	12.9%	3 <sup>rd</sup>
household demographics	10.2%	4 <sup>th</sup>
housing tenure	9.9%	5 <sup>th</sup>
family/social contacts	4.1%	6 <sup>th</sup>
non-personal control	3.8%	7 <sup>th</sup>
ethnic/religious	2.7%	8 <sup>th</sup>

**Source: PCA results**

The study showed that commercial cities have different factors that influenced its intra-city residential mobility from that of administrative cities.

### Explanations of These Identified Mobility Factors

#### Housing Tenure

The study shows that this is an important factor that stir up residential movement in Enugu. The variables that are subsumed in them include Housing type, Reduce rent payment and Size/Quality of home. There are also ranges of housing types available to consumers: single family detached homes, town houses, apartments or flats and so on. Individual dwellings also vary in quality and availability. It is important to remember that housing location choices are, in many ways, a product of constraint in that often they depend on which housing types are available in particular locations at affordable prices, knowledge of alternatives, societal expectations or norms and the regulatory environment (Graif, 2012).

It is also important to realize that tenure type has an impact on how mobile people are in the housing market and where they choose to live. As renters generally have lower relocation costs, some writers have theorized that this makes them more 'foot loose' in the housing market, so able to move more frequently than owner occupiers (Guo & Bhat, 2006). This association between housing tenure and residential mobility is been supported by Australian empirical studies (Theodos & Turner, 2012). Tenure does not just affect the frequency of household movement but it also impacts upon housing location choices in important ways.

In a study of housing location choices in Australia's two largest cities for example, Burgess & Skeltys (1992) found that inner urban areas are dominated by mobile renter households and that renters placed a much greater emphasis on reducing travel time to work than other tenure types. They found that a large proportion of households moving to the outer or fringe areas were first homebuyers for whom affordability was the overriding concern in dwelling and location choice. When asked about compromises made in their housing decisions these households frequently reported compromising on access to work in order to achieve home ownership (Burgess & Skeltys 1992). In Enugu metropolis, most of the household are moving because they were not the house owners. It was obviously observed that majority of the movers are tenants and not landlords.

#### Neighborhood Design

The study shows that this is an important factor that stirs up residential movement in Enugu. The variables that are subsumed in them include Neighborhood layout, Size/Quality of home, Neighborhood services, Neighborhood character, Leisure opportunity, Quality and cost of municipal services, Population density, Upgrade dwelling quality, Neighborhood safety, Neighborhood amenity quality, Environmental condition/pollution, Size of dwelling, Features of dwellings, Age of neighborhoods and Recreational opportunities.

Myers & Gearin (2001) present survey evidence which shows that the preference for centrally located townhouses in walkable neighborhoods is more than twice as great in older households. They suggest that this preference combined with changing demographics, notably an aging population and a decreasing number of households with

children in the US, will bring about a significant increase in demand for such housing. However, later research by Morrow-Jones et al. (2004) exploring consumer preferences for 'neo traditional' or 'new urbanist' neighborhood designs showed a distinct preference for lower density, cul-de-sac neighborhoods among a sample of homeowners in Franklin County, Ohio.

This research used a stated preference experimental design (also called conjoint analysis) which was advantageous in that it allowed the researchers to control factors like school quality, safety, access to public open space etc. The main advantage over the traditional revealed preference approach though is said to be that it allows for the examination of preferences for housing options not currently available in the market. However, there is a question about whether the respondents can truly imagine the hypothetical neighborhoods with which they are presented. Moreover, the stated preference approach can also be subject to several forms of bias including 'non-commitment bias', as households may not actually behave in the way they claim they will; and 'strategic or policy response bias', where households answer in a particular way in order to bring about certain policy outcomes (Walker et al. 2002). The study in Enugu actually showed that the quality of amenities in the area was a factor that brings people into the area. Currently, the government has introduced better infrastructural facilities, rehabilitation of road and upgrading of blighted areas. A number of researchers have also analyzed the impact of access to open space and natural features in residential decisions. Two recent studies of home buyer attitudes in Detroit and Michigan have provided some evidence that the desire to be 'close to nature' plays a significant role in housing decisions for households locating on the urban fringe (Kaplan & Austin 2004; Vogt & Marans 2004). Although Vogt & Marans (2004) find these environmental characteristics to be important, neighborhood and house design and the quality of schools were found to be more important considerations for movers.

#### **Transport Behavior Factors in Location Choice**

The study shows that this is an important factor that stirs up residential movement in Enugu. The variables that are subsumed in them include traffic congestion, distance to work, main mode of transport to work, proximity to work and proximity to shopping areas. However, the results of studies which explore the role of transport factors in the residential location of households have been mixed. While some researchers find that transport factors play an important role in household residential location, others contend that the high level of accessibility afforded by private cars nearly everywhere in metropolitan areas diminishes the importance of transport factors.

As societies change so do transportation patterns and housing aspirations. The aforementioned increase in dual-income families complicates the housing location relative to workplace decision. In a study of commuting behavior and residential location in Los Angeles, US, Giuliano & Small (1993) found that households generally commute more than they need to and this suggests that transport to the workplace at least, is not a salient determinant of residential location in some developed countries. This is not the case in Enugu since the study shows that transportation was found to be a major determinant in location choice. However, Giuliano & Small (1993) propose a number of hypotheses which may explain this pattern: individuals do not find commuting very onerous; frequent job turnover and high moving costs leads households to choose accessibility to future employment not just their current job; two-worker households cannot find jobs close together; non work trips are becoming more important or; in choosing a place to live households place greater emphasis on housing or neighborhood characteristics than they do on transport factors (Giuliano & Small 1993).

On the other hand, a more recent stated preference experiment exploring residential location choice behavior in Oxfordshire, UK, found that transport factors *were* important determinants of housing movement and location choice. The study found that an increase in travel time or cost to work or shopping was a good predictor of household movement (i.e. a 'push factor'). The authors concluded that "individuals prefer residential locations with a combination of shorter commuting time, lower transport costs, lower density and higher school quality" (Jae Hong Kim, Pagliara & Preston 2005). This situation is true about Enugu.

#### **Quality of Life Factors and Security**

The study shows that this is an important factor that makes for residential movement in Enugu. The variables that are subsumed in them include purchase/live in own home, Investment opportunities, Hostile neighbors, More Secured building, Dislike neighbors, Local business opportunities and Crime rate. A number of factors, generally classified as 'quality of life' features, are also known to influence housing location choices. These factors relate to people's preferred lifestyles, preferences for leisure and recreation, familial connections, aesthetics of the surroundings and feelings of safety and security. Colwell et al (2002) explored the connection between preferences for recreation (particularly outdoor activities dependent on sites outside urban areas such as skiing, scuba diving or

rock climbing) and the tendency for people to choose a residential location in close proximity to the recreation site. They claim that consumer preference for recreation does exert influence over residential location; the stronger taste for recreation the more likely a person is to locate close to recreation sites.

#### **Influence of Each of the Factors in the Intra-City Residential Mobility in Enugu Metropolis**

It was revealing from the study that the factor that had the highest influence in the intra-city residential mobility in Enugu metropolis was the quality of life of the household Security. In Enugu, recall that this factor - quality of life of the household has seven variables that were subsumed in it. These include purchase/live in own home, Investment opportunities, Hostile neighbors, More Secured building, Dislike neighbors, Local business opportunities and Crime rate. This factor had 32.7% influences as revealed by the result of the PCA on the intra-city residential mobility in Enugu metropolis. In other words, policies that are connected to ensuring security of dwellers in commercial cities should be paramount to ensure reduced mobility of members and investors. Neighborhood policing, presence of security agencies and paramilitary agencies ought to be encouraged in commercial areas. This boosts businesses and commercial activities (Owusu, 2004).

The second most influential factor that causes intra-city residential mobility in Enugu metropolis was the neighborhood design of the city and commercial activities respectively. For Enugu, the factor had 15.4% impact on household decision in intra-city residential mobility in Enugu metropolis. The driving variables in this factor include: Neighborhood layout, Size/Quality of home, Neighborhood services, Neighborhood character, Leisure opportunity, Quality and cost of municipal services, Population density, Upgrade dwelling quality, Neighborhood safety, Neighborhood amenity quality, Environmental condition/pollution, Size of dwelling, Features of dwellings, Age of neighborhoods and Recreational opportunities. Various authors like, Myers & Gearin (2001), Morrow-Jones et al (2004) and Walker et al. 2002 had argued that this factor is a strong determinant in the residential movement in developing countries. This has been collaborated in the study done in Enugu.

The third most influential factors that cause intra-city residential mobility in Enugu metropolis was the transport travel behavior of the residents and proximity. The variables that are subsumed in them include traffic congestion, distance to work, and main mode of transport to work, proximity to work, close to religious congregation and proximity to shopping areas. It has 12.85% impact on household decision in intra-city residential mobility in Enugu metropolis (Giuliano & Small 1993) confined that this factor had a strong influence in residential movement choice in both developed and developing countries of the world. However, in Enugu, they were rated as the third influential factor. This is quite surprising. This could be attributed to the fact that some of the dwellers are not engaged in duties or occupations that do take them away from their homes.

The household characteristic was revealed to be the fourth most influential factor that causes intra-city residential mobility in Enugu metropolis, while Household lifecycle was the fourth influential. For Enugu factor, the variables that are subsumed in them include change in household size/structure, change in income and affordability. The housing tenure of the house was also revealed to be fifth most influential factor that causes intra-city residential mobility in Enugu metropolis. The variables that are subsumed in them include housing type, reduced rent payment and Size/Quality of home. Studies done by Oswald 1999, and Burgess & Skeltys (1992), revealed that this factor has great influence on the city residential mobility. Other factors, as has been earlier explained in the study that influenced intra-city residential mobility in Enugu metropolis were family/social contacts, 8.4%; non-personal control, 4.2% and ethnic/religious factors - 3.4%. Surprisingly, although residents in this metropolis seem to be religiously and ethnically inclined, this factor had the least effect in influencing their residential mobility.

#### **Factors that Influenced Residential Mobility in the Different Residential Densities**

It was revealed from the study that there were differences in the factors that influence residential mobility among residents across the residential densities in the study area. The result showed that there was remarkable significant difference in the factors that influenced residential mobility among residents across the various residential densities in Enugu. Seven factors influenced residential mobility among residents in the residential low densities; eight factors influenced residential mobility among residents in the residential medium densities while nine factors influenced in residential mobility among residents in the residential high densities. The seven factors that influenced residential mobility among residents in low densities residential area include neighborhood influence, religious/house unit influence, environmental effects, proximity, transportation, economic reason and non-personal control. The eight factors that influenced residential mobility among residents in medium density area included neighborhood characteristics, social, non-personal control influence, ethnic/transport reasons, economic influence, proximity,

neighbor's influence and duration, while the nine factors that influenced residential mobility among residents in the high-density residential area were neighborhood influence/ proximity, religious or finance, social factors, municipal services, ethnic or house unit factors, non-personal control, transportation, duration and neighbors' influence

### **Recommendation and Conclusion**

The following recommendations are listed below

- I. Government should take into consideration the pattern of intra-city residential mobility among various residential densities, in Enugu urban when providing housing accommodation. This is important in order to reduce unnecessary incidences of household mobility
- II. A design approach, which responds to the expectations of the users, gives importance to social and cultural values, with enriched modern-technological understanding should be adopted. With such an understanding, economical and fast dwellings will be constructed and provided
- III. Residents have equally expressed a significant preference to live closer to where they work, if opportunity is availed to them. Therefore, it becomes expedient that government housing policy should be re-oriented towards addressing the location preference of housing consumers

### **Conclusion**

The study found out the determining factors that influence residential mobility in Enugu Metropolis. These determining factors in Enugu metropolis which represents a typical administrative city were predominantly in number. However, they were of different constituent. The factors in Enugu were quality of life, neighborhood design, travel mode, household demographics, housing tenure, family or social contacts, non-personal control and ethnic or religious factors. Again, there are varying factors that influenced residential mobility in the different residential densities in the urban areas. The understanding of the factors would help urban planners, Environmentalist, Government Organisations and policy makers in decision making.

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