

**ASSESSMENT OF PHYSICAL ENVIRONMENTAL FACTORS
INFLUENCING RESIDENTIAL AREA PREFERENCE IN OTUKPO
TOWN, BENUE STATE- NIGERIA**

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ABSTRACT

The study assessed the physical environmental factors such as street cleanliness, access road, condition of drainage channel, layout of surrounding, waste management, distance to work, absence of pollutants, quietness of residential area, traffic congestion, nearness to market, nearness to school, nearness to bank, access to public transport and access to bus stop that influence residential area preference in Otukpo town of Benue State, Nigeria... Three sampling techniques were employed for the study. First, stratified sampling technique was used to stratify the study area into eleven (11) residential areas, secondly, systematic random sampling was used in which one household head was selected based on the skipping ratio of four (4) per interval. A total of 400 households was selected and administered questionnaire based on stratified sampling but 386 households returned their questionnaire based on systematic random sampling, but in a situation where many households were living in any of the house (compounds) selected, convenience sampling was used to administered a questionnaire to the first head of household met in such compounds. The data collected for this study were analysed using factor analysis because of its ability to reduce large variables to manageable factors. Using factor analysis, based on Kaiser Principle, two factors were extracted using the variable maximization method with Eigenvalues of 12.23, and percentage contributory variance of 87.332 %. These physical factors include access road, (.950) street cleanliness, (.926), layout of surrounding,(.848) absence of pollutants,(.825) quietness of residential area,(.895) nearness to school(.925), nearness to market (.855)and access to public transport (.924). The study also revealed a positive relationship between the factors and shows the extent to which these factors strongly influence residential area preference in Otukpo town. The environmental management implication of the study is the need for good urban governance that focuses on urban infrastructures and social service provision. The study, therefore, recommends that state and local government authorities should provide and rehabilitate the needed social and environmental infrastructures for sustainable urban livelihoods.

Keywords: Residential Area Preference, Physical Environmental Factors, Otukpo town, Benue State.

1.0 INTRODUCTION

The location of the residential area and the nature of its immediate area are prime determinants of the households ability to accomplish non- residential goals. For example,

when most people consider locating in a residential area, their three most important considerations are location, location and location. Neighbourhood norms indicate that we not only choose a safe and attractive area in which to live, but also a neighbourhood that is appropriate to a household's social and economic status (Beamish, et al, 2001). The quality and desirability of a residential area are affected by its physical surroundings and by the services and amenities available in the residential area. Within this norm, households are looking for neighbourhoods that could provide for the entire household, most likely to be a residential area that is close to work, shopping centres, school and recreation, quiet, clean, safe, and stable (Lindamood and Hanna,1979).

According to Morris and Winter (1978), referring to Foote et al, there are three aspects of the location of the residential area that potentially could be considered by households. First location as a site, which indicates the distance between the location of the home and work, shopping centres, school, recreation facilities and the locations of the homes of friends and relatives. Secondly, location as physical environment, referring to the individual aspects of the physical environment (the density, light, air, and the quality of the facilities such as schools, libraries, stores, quality of the municipal services and utilities such as fire and police protection, garbage collection, water and sewer). Thirdly, location as a social environment, referring to the characteristics of the people in the area. The possibility of everyone living where they would prefer is not always easy. This presupposes some form of competition for the most desired residences, resulting in a situation where price plays a crucial role in limiting the options available. However, the restricted choice which is an offshoot of this competition for the most desired residences may be considerably reduced as a result of the variation between people in the residents and lifestyles they prefer. For instance, while some people may choose a city-centre location, others may prefer a suburban one, and yet others, an intermediate-urban one. It must be stressed, though, that the reasons for the choice of residences among different people are very varied. These include access to employment, business, educational, cultural or recreational opportunities, prestige and affordability. Others are familiarity with one residence or type of residence, perhaps as a result of growing up there, dwelling characteristics such as age, number of rooms, type of appliances or facilities available, or emotional attachment to a place or a lifestyle (Garling and Friman, 2002). A household's decision to choose a particular residential area could be due to socio-economic, cultural, administrative or purely psychological factors (Ogunjumo and Olatubara, 1997). Furthermore, the relatively permanent influence that certain factors have on residential area preference makes an understanding of those factors important for the formation and effective management of residential area demand (Guo and Bhat 2006). The decision to move or stay is influenced by a range of factors. According to Rossi (1955), 'Reasons for moving are divided into those which pertain to the decision to move out of the former residential area - 'pushes' and those reasons pertaining to the choice among places to move to- 'pulls' (Ross; 1955). Push factors may include an increase in externalities like pollution or crime, changes in housing affordability, dissatisfaction with current dwelling or changes in household structure (like birth or divorce). Pull factors often include things like access to good quality public service (like schools and health care facilities, employment, leisure and recreational opportunities or fulfilment of housing aspirations Sanchez and Dawkins, 2001).

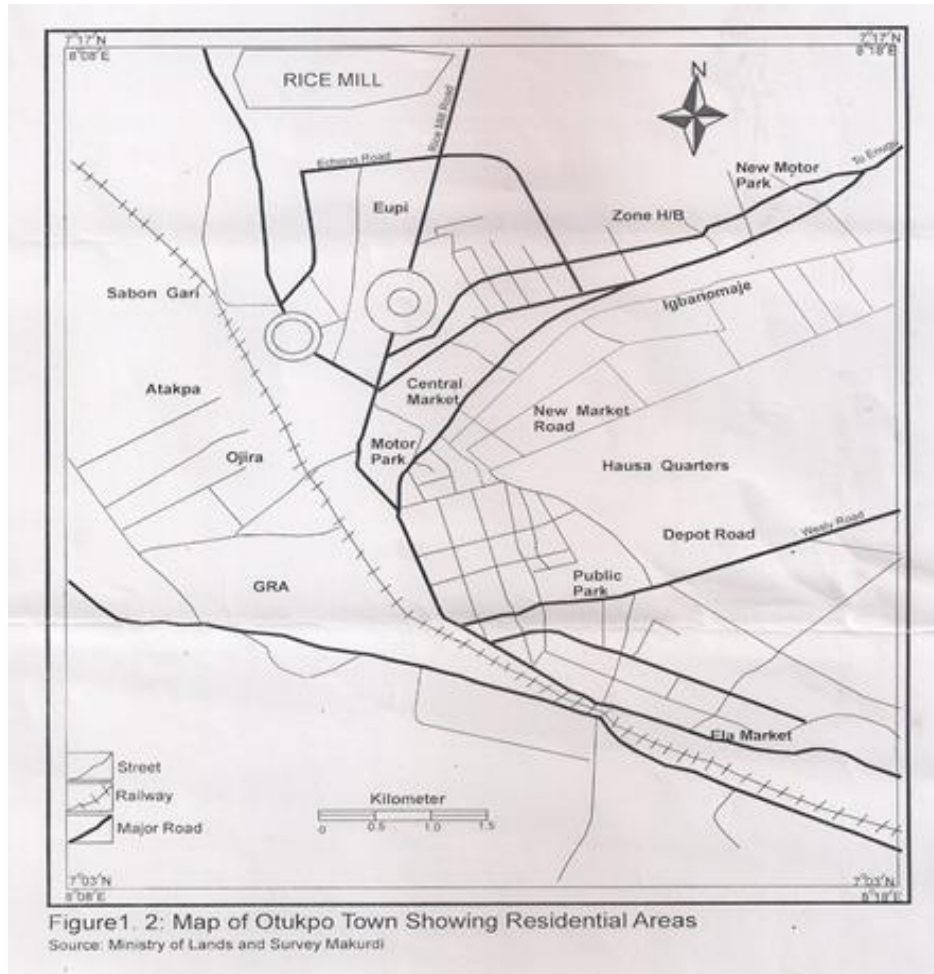
An urban area implies an area with diverse and spatially dispersed factors. These factors attract and influence residential area preference. Consequently, the more influencing factors

an area has, the more diversified or great the factors that influence residential area and socio-economic activities. Residential area preference in cities will be constrained if the location of the factors considered for residential area preference is well arranged or planned. The fact that available residential amenities and infrastructural facilities do not increase at the same rate, households demand it especially during the period they select residential areas, further compounds the situation. This has been the situation in Nigerian's urban centres for years now in general and Benue state in particular and has continued to assume crisis proportions because as cities grow in size and population demand on the urban residential area preference. Despite the efforts of Otukpo Local Government Council and the state government at providing a liveable environment in Orakpo urban areas, the population distribution in the area seems to be unequally distributed. These disparities seem to have been influenced by residential preference and necessitated by the socio-economic characteristics of the residents and environmental characteristics of the area. This study, therefore, investigates factors influencing residential area preference in the study area.

2.0 STUDY AREA.

Otukpo town in Otukpo Local Government is the headquarter of Otukpo Local Government and is the third largest town in the state after Makurdi and Gboko. The town lies between latitudes 7°00' and 7°30'N and longitudes 7°30' and 8°10'E. The area has marked wet and dry seasons, an indication of the Koppen's Aw tropical humid climate type. Rainfall is expected in April-May and lasts till November with peaks in June – July and September – October. Surface drainage of the area is poor as cases of the flood are experienced during a heavy downpour. The geology of Otukpo town- complex marine sediments made up of shale, sandstones and siltstones underlay, which offer poor infiltration and groundwater storage encourages profuse surface runoff during rains. The fractures in the shale are not interconnected. There is no clearly defined ground water level and even where found, the water table fluctuates between the wet and dry seasons. Based on this there are few or no exploitable groundwater reserves in the area. The major rivers in the area are Okokoro, Edikwu, Otada and Ukplo. These rivers are highly seasonal and dry up in the dry season with some stagnant pools in their channels in the dry season. This seasonality of the drainage system creates serious problems to inhabitants of Otukpo town since most of the residents depend on natural sources for their water needs. The projected population of the town is estimated at 38,880 persons. The pattern of settlement is a predominantly nucleated settlement with concentrated structures and stratified into eleven residential areas. The town is characterized by different land use systems. They include administrative, agriculture, commercial and industrial.

Urbanization has brought numerous human activities thus making the land to experience increased pressure as a result of the influx of people into the town. A number of industrial activities are carried out in the town. Examples include: Otukpo Burnt Bricks Company, Rice mill industry, Cassava processing factories, metal welding, fabrication, and commercial activities are also carried out. The predominant occupation of the inhabitants includes farming, trading, wholesale and retailing of consumer goods, provision of services such as tailoring, hairdressing, laundry and the sale of food commodities which are carried out in the central market and other strategic places that are found in the town. (fig 2)



3.0 MATERIAL AND METHOD

Data on physical factors influencing residential area preference were collected using size sample of 400 respondents out of which 386 heads of households returned their questionnaire. Three sampling techniques were employed for the study. First, stratified sampling techniques were used to stratify the study area into eleven (11) residential areas, secondly, systematic random sampling was used to select the houses of respondents, during the selection, one house was selected based on the skipping ratio of four houses per interval. In a situation where many households' were living in any of the house (compounds) selected, convenience sampling was used to the administered questionnaire to the first head of household met. The parameters were defined as follows:

X1= Street cleanliness

X2= Access road

X3= Condition of the drainage channel

X4= Layout of Surrounding

X5= Waste management

X6= Distance to work

X7= Absence of pollutants

X8= Quietness of the residential area

X9= Traffic Congestion

X10= Nearness to market

X11= Nearness to school

X12= Nearness to bank

X13= Access to public transport

X14= Access to a bus stop

Variables X1,X2,X3,X4,X5,X6,X7,X8,X9,X10,X11,X12,X13,X14 were measured through the use of questionnaire. Factor analysis was used in summarizing and analyzing the data; as well as identifying the principal dimensions of the selected variables responsible for physical residential area preference in the study area to identify their relative contributions in influencing residential area preference in Otukpo town. The factor analysis generated both the correlation matrix and the rotated factors matrix, in which only factors with Eigenvalues above unity with 5% or more explanatory powers considered as separate orthogonal dimensions or factor components (Anyadike, 2009).

4.0 RESULT AND DISCUSSION

4.1 Physical Factors Influencing Residential Area Preference in Otukpo town.

There is a significant positive correlation between variables. However, no particular pattern can be deduced from this relationship. However, these were resolved through the use of factor analysis. On the basis of the Kaiser principle, two factors were extracted using only variables with a coefficient of $\pm .50$ and above are considered significant (at 0.5 confidence level). These factors produced a number of significant variables (in parenthesis) that define the physical factors explaining residential area preference in Otukpo town. The result shows that the factors offer a significant contributory explanation of 87.3%, leaving just 12.7% unexplained which could be due to non-physical factors.

4.2 Physical factors influencing residential area preference in Otukpo town is presented in table

Table 1 shows the rotated physical environmental factors matrix for Otukpo town; Factor one which has an Eigenvalue of 6.37 accounts for 45.501 per cent of the total variance. It has a very high positive loading on variable 1(street cleanliness), 5(waste management), 6(distance to work) 7(absence of pollutants), 9(traffic congestion), and 12(nearness to a bank).

Table 1. Physical Factor Matrix of Residential Area Preference in Otukpo Town.

VARIABLES	RESIDENTIAL AREA PREFERENCE FACTORS	
	I	II
Street cleanliness	(.926)	.291
Access road	.396	(.813)
Condition of drainage channel	(.912)	.236
Layout of surrounding	-.368	(.925)
Waste management	(.552)	.247
Distance to work	(.832)	-.207
Absence of pollutants	(.825)	.376
Quietness of area	-.177	(.895)
Traffic congestion	(.616)	-.302
Nearness to market	.359	(.855)
Nearness to school	.239	(.824)
Nearness to bank	(.553)	.239
Access to public transport	.218	(.919)
Access to bus stop	.164	(.831)
Eigen-value	6.37	5.86
% Variance	45.501	41.831
% Cumulative explained	45.501	87.332

Source: field work, 2015.

All these positive loadings touch on the state of infrastructure and proximity of the location, therefore, the positive loadings can be regarded as street cleanliness factor. Factor two can, therefore, be referred to as access to infrastructure and town planning factor. This is discernable in the slum areas of Sabon- Gari, Ojira, Zone H.B, Atakpa, Ogwonu-Igbahapa and Eupi. Further interaction with the respondents during the field study revealed that residents consider access road, the layout of surroundings, quietness and presence of a school in all the residential areas when taking a decision on a residential area to locate in the study area. Observation also reveals that the majority of streets in the slum areas don't have drainage channels leading to flooding of the areas after downpours.

5.0 CONCLUSION

This study has assessed the physical factors that influence residential area preference in Otukpo town. The study has revealed that much of the physical residential area preference decisions in the study area owe much to street cleanliness, access road, the layout of surroundings, absence of pollutants, the quietness of a residential area, nearness to school and access to public transport. This is obvious as residents' locate in residential areas where all these variables are obtainable and affordable. The study, therefore, recommends that state and local government authorities should rehabilitate and maintain major access roads within the study area to ease intra-city movement. The government should intensify efforts towards proper and efficient waste management practices in the study area in order to curb the menace of leaving waste unmanaged in the study area.

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