



Socio-Economic Determinants of Urban Expansion in Peri-Urban Areas of Oyi Local Government Area, Anambra State, Nigeria.

¹*Ikedigwe, C.A;* ²*Akanwa, A. O. and* ³*Ezeomodo, I. C.*

^{1,2,3}Department of Environmental Management,
Chukwuemeka OdumegwuOjukwu University, Uli, Anambra State, Nigeria
Email: chiomaikedigwe@gmail.com

ABSTRACT

The paper appraised the socio-economic determinants of urban expansion in the peri-urban areas of Oyi Local Government Area, Anambra State, Nigeria. The study was necessitated due to the ever changing narratives of socioeconomic indicators to development. In order to ensure data availability, copies of questionnaire were distributed to selected household heads in the area. In all, a sample of 400 respondents was drawn using the Taro Yamene formula. Specifically, Nkwelle-Ezunaka and Ogbuinke settlements were purposively sampled out due to the status as peri-urban areas in Oyi LGA. GIS technologies, simple percentages among others were also used in operationalizing analysis from obtained data. The study showed that socioeconomic factors significantly influence the level of urban expansion in the study area. For instance, income, age and occupation of residents drastically mount various degrees of pressure of residents forcing them to embark on housing development. Being that land is scarce, especially in the city centres, the peri-urban areas become the next destination for housing development. However, the urban expansions have negative effects on the survival of agricultural land. Based on this, it was suggested that land use development be regulated using urban sustainability as a tool.

Key words: Gender, income, occupation, socioeconomic development, urban agriculture

1. Introduction

Generally, urban expansion is an aftermath of population boom, economic growth and social inclusion. Notably, available studies have shown that socioeconomic attributes play intricate roles in city expansion, urban development and expansion. From available studies, it has been shown that residents and developers in the city suburbs differ in terms of their socioeconomic attributes. For instance, the study of Etim (2021) in Ikot Ekpene, Akwa Ibom State showed that developers in the city fringes are mostly those that are non-indigenes that demand land for development. Holistically, over 45 percent of the residents acquire and through purchase. Most of the residents of the suburbs come up with the decision of relocating to the suburbs within the ages of 35 years and 50 year olds and are mostly males. Etim further showed that religious backgrounds influence largely the choice of land that migrants into the city suburbs make.

In a similar study, Udoh (2021) noted that residents of the city suburbs are mostly males. His report was based on the fact that these males are household heads hence, collecting data on the basis of household showed that males dominated in terms of the residents of the area. He further noted that residents of the suburbs are predominantly 50 year olds and the area is mostly composed of high percentage of married people. Udoh's work showed that civil servants and business men constitute over 50 percent of the suburb residents and they earn above N60, 000 monthly.

Ojikpong, Agbor and Emri (2016) observed that some of the suburb residents were probably displaced due to the changing patterns of urban land use in the city core. They explained that residents of city core are likely to relocate to the city peripheries and set up squatters/shanties in case of building use conversion due to certain factors. They noted specifically that the direction of land use change in the city centre is from residential to commercial and it has serious implications on survival of the urban poor. Yaro, Obongha, Okon and Itam (2014) made similar findings noting that over time, continuous demand for land and associated developments trigger secondary activities even in the peripheries. In all, developers and residents in the city peripheries differ significantly. It is therefore necessary to assess the variations that exist within the residents in the study area as such variable may determine largely their reasons for contributing to the changes in the use of land in the peripheries of the city.

While studies have continued to show that expansion of urban areas is triggered by socioeconomic factors, the level to which the foregoing contributes to urban expansion has not been captured in existing studies. Even more, the case of peri-urban areas has not been given attention with particular reference to Oyi LGA. From the foregoing, it is clear that there is a gap in literature that needs to be filled. Based on the need to fill the knowledge gap and contribute to knowledge as well as bring the level to which urban expansion is influenced by socioeconomic activities in the Oyi LGA, the study was conceived.

2. Literature and Conceptual Review

Etim, Itiat and Attah (2023) explored the relationship between socio-economic characteristics of respondents and land use change in Ikot Ekpene LGA. Income levels, occupation, educational status, and household size exhibited significant correlations with built-up areas, underscoring the impact of these socio-economic factors on urban expansion.

The implication drawn from these findings was that urban planning should focus more on homocentric factors—those related to the socio-economic characteristics of the population—rather than solely relying on population numbers. This suggested that the socio-economic characteristics of the population played a more influential role in driving land use changes than sheer population size. They recommended that the National Population Commission should consistently publish not only census figures but also the socio-economic characteristics of the population. This additional information was deemed crucial for effective planning, ensuring that urban development aligned with the actual needs and characteristics of the population.

Opatoyinbo, Adepetu, and Abdullahi (2015) investigated the relationship between population and land use change along river Kaduna flood plain. The result showed that population was not the only factor that affects the land use patterns along the river flood plain. A graph was plotted showing the relationship between population and land use pattern in the area; the graph showed an ever increasing trend in population growth while land use pattern changed on a declining trend. The study concluded that there was no correlation between population and urban land use changes. This result confirmed the assertion of Young *et al* (1991) who noted that population growth is not the main driving force of land use change as its importance is relative to the other forces generating land use change such as technology and social advances and socio-economic characteristics of the people. They opined that population density may be sufficient to cause changes in land use pattern but it is not a necessary driver for such changes as socio-economic characteristics is a more potent driver of urban expansion.

The Concept of Land Use Transition

Land is used to meet a multiplicity and variety of human needs and to serve numerous and diverse purposes. When the users of land decide to employ its resources towards different purposes, land use change occurs, producing both desirable and undesirable effects (Etim, 2021). The analysis of land use change is the analysis of the relationship between people and land. The pace and intensity of land use change has increased tremendously due to increasing human activities including migration and land use conversion (Lambin and Geist, 2006). In order to understand current changes in land use it is essential to adopt a long term view of land use history, for this reason it is necessary to consider the mechanism of land use transition. The use of land transition in studying land use change spans both the spatial and temporal scales. Martinez and Suarez-Seoane (2011) defined land use transition as a process of societal change in which the structural characteristics of society is transformed. Lambin and Geist (2006) observed that transition results from a set of connected change, which reinforce each other but take place in several different sectors of society resulting from the development interactions. Jianchu, Jeff and David (2015) viewed Land use change as being caused by generalized form of complex socio-economic phenomena such as changes in socio-economic characteristics of the population.

3. Methodology

3.1 Study Area

Oyi LGA is located in the South-West of Awka the capital of Anambra State and on East of River Niger, (Figures 1 and 2). It's located between Latitudes 5° and 7°N and Longitudes 6° and 7°E (Onumadu, Ekwugha, & Osahon, 2013). The area is known for vast agricultural farming in both crop and livestock production. Being agrarian area, residents are essentially agricultural based and reputed as one of the food baskets of Anambra State. It has wide arable land and the crops grown include: rice, yam seeds, cassava, cocoyam, maize and vegetables. Domestic animals are goats, sheep and fowl. Due to the system of land ownership in the area, cultivation of crop is relatively in small land holdings by individual farmers who practice cropping often with fallow system (Nkamigbo, Nwoye, Makwudo & Gbughemobi, 2019). The soil is fertile for agricultural activities.

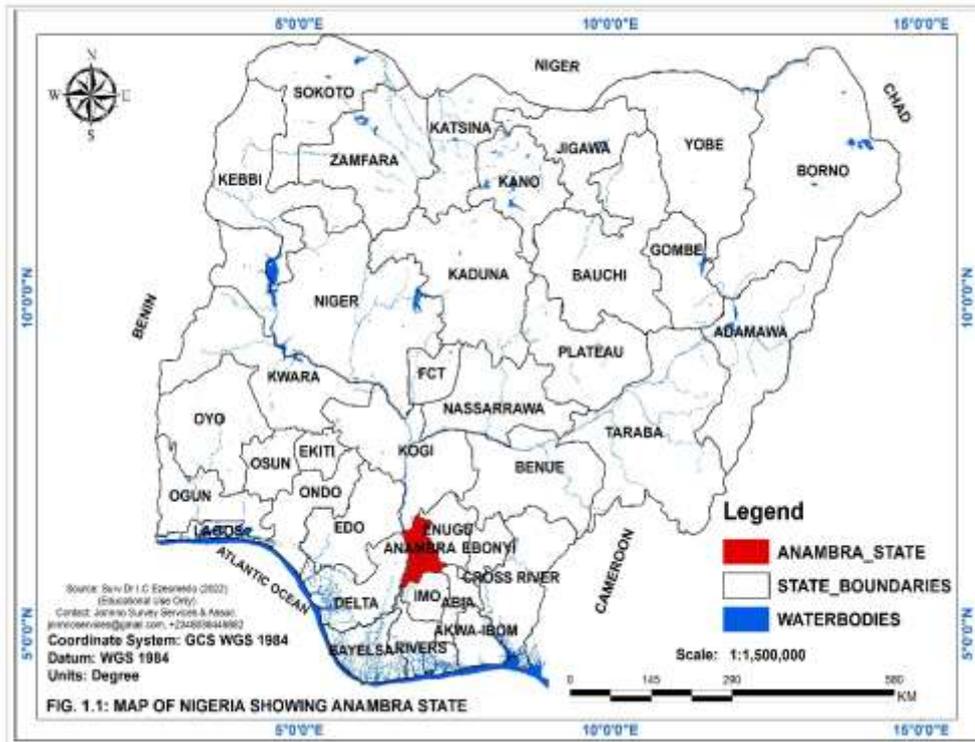


Figure 1: Administrative Map of Nigeria Showing Anambra State

Source: Jorinno Survey Services & Assoc. Nig. (2022)



Figure 2: Administrative Map of Anambra State Showing Oyi LGA

Source: Jorinno Survey Services & Assoc. Nig., (2022).

3.2 Methods

The survey design was adopted in the study. The major instrument for data collection was copies of questionnaire. Data were obtained using 400 copies of questionnaire. Two peri urban areas (Ogbunike and Nkwelle-Ezunaka) in Oyi LGA were purposively chosen. Specifically, data were obtained on the socioeconomic characteristics of the respondents such as sex, age, occupation; income and level of education, Data that were used in the study also included information on the population of the study area, area of land based on land uses.

The population of the study area consists of the inhabitants of Ogbunike and Nkwelle-Ezunaka in Oyi Local Government Area of Anambra State. The results of the 1991 population was presented on the basis of the autonomous communities which are Ogbunike and Nkwelle-Ezunaka neglecting the sub units that make up the entire population. To quantitatively sample appropriately, the 1991 population of the villages in Nkwelle-Ezunaka and Ogbunike was used. According to NPC (1991), a total of 82,350 persons were residing in the area. Projections to 2020 using a growth rate of 2.5 percent show that the population of the areas as at 2020 as 168,818 persons. To this end, the population of people in the study area was 168,818 persons.

The sample size was determined from the population of the villages that make up the peri-urban areas of Oyi Local Government Area. Projections to 2020 showed that a total of 168,818 persons were residing in the area. The Taro Yamane statistical equation was used in establishing the sample size for the study. It is mathematically illustrated as follows;

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

Where: n = Sample size, N= Population size, e = Level of Significance/ limit of error, 1= unity (constant)

$$n = \frac{168,818}{1 + 168,818 (0.05)^2}$$

$$n = \frac{168,818}{423.045}$$

$$N = 399.$$

Approximately, 400 persons were taken as the sample

4. Data Presentation and Analysis

Table 1: Socio-Economic Characteristics of Respondents

No	Biographic	Frequency	Percentage	Total
1	Gender			
A	Male	202	51	400
B	Female	198	49	
2	Age			
A	Below 26	86	22	400
B	26-45	189	47	
C	46-65	86	22	
D	66 and above	39	9	
3	Marital Status			
A	Single	48	12	400
B	Married	257	64	
C	Divorced	-	-	
D	Separated	13	3	
E	Widow /Widower	82	21	
4	Educational Status			
A	Primary	-	-	400
B	Secondary	7	2	
C	Tertiary	216	54	
D	Non Formal	177	44	
5	Occupation			
A	Civil/Public Servant	111	28	400
B	Farmer	184	46	

C	Taxi Driver	9	2	
D	Trader	96	24	
E	Applicant	-	-	
F	Others	-	-	
6	Years of Residing in Oyi LGA			400
A	0 – 5 years	49	12	
B	6 – 10 years	194	48	
C	11 – 15 years	70	18	
D	16 years and Above	87	22	
7	Where they live in Oyi LGA			
A	Urban Area	-	-	
B	Peri- Urban Area	400	100	
C	Rural Area	-	-	
8	Family Size			
A	1-2 size	94	23	400
B	3-4 children	139	35	
C	5-6 children	167	42	
D	6 and above	-	-	
9	Occupation of Head of the Family			
A	Farmer	182	46	400
B	Business	119	30	
C	Applicant	99	24	

Source: Field Survey, 2022

Table 1 shows the socio economic characteristics of the respondents. From the Table, out of the 400 respondents, 202 are male, while 198 are female. On the ages of the respondents, 22% are below 26 years, while 47% are between 26 and 45, 22% are between 46 and 65 while the remaining 6% are 66 years and above. Based on the marital status, 48 out of the 400 respondents are single, 257 are married, none is divorced, 13 are separated while 82 are either widows or widowers. On their educational qualifications, none of the respondents has just primary education, 7 have secondary education, 216 have tertiary education while for non-formal education, and 177 people fell under this category. For their occupation, 111 are civil servants, 184 are farmers, 9 are taxi drivers, 96 are traders while none are either applicant or others. For the number of years they have lived in the LGA, 12% have stayed for between 1-5years, 48% between 6-10 years, 18% between 11-15 while 22% have stayed 16 years and above. The table also showed that all respondents were residents of the peri-urban area while for their family size, 94 respondents have between 1-2 family size, 139 have between 3 and 4 while 167 have between 5 and 6 persons. Finally, none has 6 and above persons as their household size.

Table 2: Urban Expansion in Nkwelle-Ezunaka Community

LANDUSE	BUILDING UNITS	AREA (SQM)	POPULATION FIGURE
Residential Area	11850	1,715,963	11850 x 5 =59,250
Commercial Area	748	157,699.9	748 x 1=748
Industrial Area	51	28,860.57	51 x 1=51
Educational Area	117	43,748.76	117 x 1=117
Total	12,766	1,946,272.23	60,166

Table 2 is the Building Footprints of Nkwelle-Ezunaka Community that was used in the calculation of population figure of this area. Therefore, the estimated population figure of Nkwelle-Ezunaka= 59,250+748+51+117=60,166. While, the statistical population computation and projection at 2.83% growth rate shows that the population of Nkwelle-Ezunaka Community is 68,113.

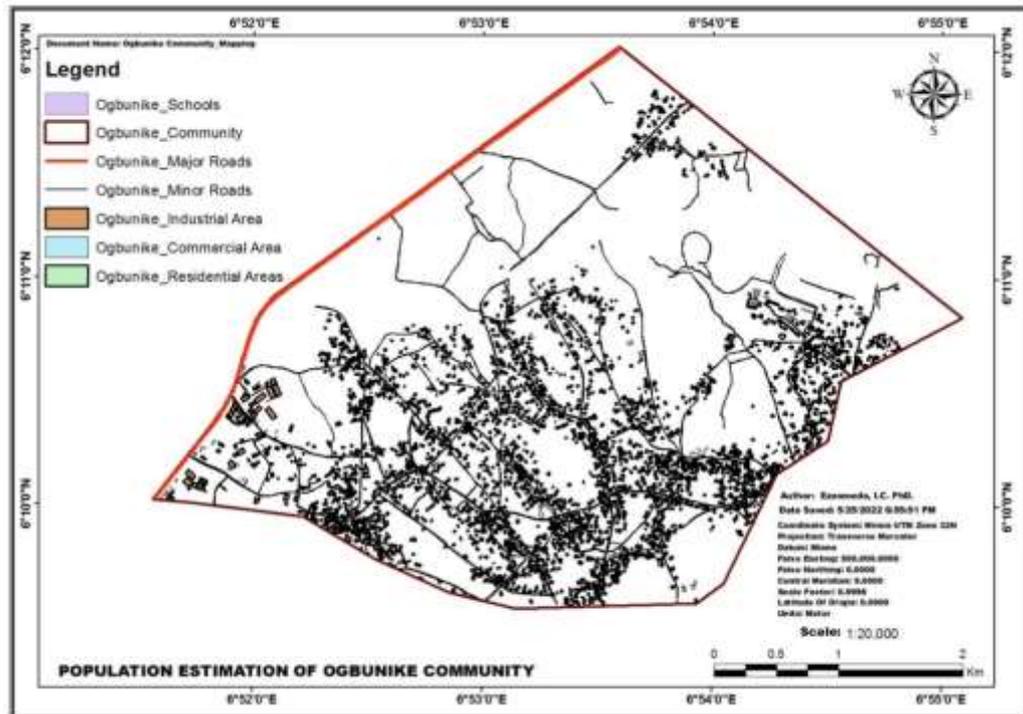


Figure 3: Map of Ogbunike showing Urban Expansion

Table 3 is the Building Footprints of Ogbunike Community that was used in the calculation of population figure of this area. The total population of Ogbunike community was estimated by multiplying the total number of households units with the total number of persons normally living in a residence using Equation 2.

$$\text{Popf} = \text{TnBd} * \text{AvgHdSize} \tag{Equation 2.}$$

Where, Popf = Population Figure,

TnBd = Total number of building in a given area,

AvgHd Size = average household size.

Table 3: Urban Expansion in Ogbunike

LAND USE	BUILDING UNITS	AREA (SQM)	POPULATION FIGURE
Residential Area	4065	710,798.1	4065 x 5=20,325
Commercial Area	168	36,627.95	168 x 1 =168
Industrial Area	77	69,649.49	77 x 1 = 77
Total	4,310	817,075.54	20,570

Thus, the estimated population figure of Ogbunike = 20,325+168+77=20,570

The statistical population computation and projection at 2.83% rate shows that the population of Ogbunike Community is 57,536. Details is shown in Figure 4.19 is a column demonstration of projected population of Ogbunike Districts.

5. Discussions

The study identified the socio-economic characteristics of the inhabitants of Nkwelle-Ezunaka and Ogbunike in Oyi Local Government Area. It was noted that in terms of gender, males dominated in the study area. This means that those that are mostly involved in setting up developments in the study area are males. Furthermore, the study showed that the dominant age bracket in the study area consists of those between 26 years and 45years. Obviously, people within the dominant age brackets are still within the productive age and can be able to venture into food production whether in rural or peri-urban areas.

The study also revealed that those above 66years are practically aged and could not take active roles in the food production sector in the study area. Still on the basis of socioeconomic affiliations, the study noted that residents of the study area had mostly tertiary education meaning that if food security is prioritized, they have the necessary requisite knowledge in ensuring proper food storage, application of fertilizers and organic nutrients that are capable of improving plant yield to ensure food security in order to effectively provide for the ever increasing number of persons in the area. It also suggests that

obtaining credit facilities will be relatively easy for these people hence; food security is expected to hit a certain level of positivity if given priority and actions taken.

Equally, most of the residents of the study area take farming as their livelihood, meaning that their major occupation is farming. The predominance of farming as the major occupation implies that food security level should be considerably good. Sadly, the continuous attempt by developers to convert agricultural land constrains the efforts of farmers to increase land cultivation for maximum food production and food security. In all, the socioeconomic attributes of the residents of the study area suggest that food security should gain a certain level of positive increase given the variables identified in the study. This finding is in line with earlier results of Bassey and Eteng (2021). They noted that in Cross River State, residents that mainly provide services that are primary in nature such as agriculture among other artisanal activities are mostly males that are within the very active ages since strength is required in the production process. Bassey and Eteng (2021) also noted that the services that are provided by the people contribute maximally towards ensuring that the socioeconomic status of the people is improved. In Nassarawa State, Omang (2022) made similar observations. Omang specifically deduced those food producers and those that are working assiduously towards ensuring that food security in both rural and peri-urban areas share socioeconomic attributes that are same with the ones seen in the present study. Ewah (2021) also made similar observations in his study when he compared the socioeconomic attributes of food producers in central Cross River State.

6. Conclusion

The paper assessed the socioeconomic determinants of urban expansion in Oyi LGA, Anambra State, Nigeria. The study showed that urban expansion is largely influenced by socioeconomic determinants of the study area. For instance, income as an economic factor influences the level to which residents in the study area embark on land development activities in the peri-urban areas. Notably, development activities are largely tied to the availability of finance to enable project owners to carry out implementation. Other determinants such as occupation, age and gender were all noted to significantly influence the level of urban expansion in the study area. From the foregoing, it was demonstrated that urban expansion has been witnessed in the study area due to urban expansion. The expansion of the area is not without negative implications on the survivability of agricultural lands and in the long run, food security. Therefore, urban expansion affects agricultural development in the study area to a large extent. Based on the observations in the study, it was inferred that urban expansion be regulated such that its negative implications on agricultural land will be minimized in the study area.

REFERENCES

- Adepoju A.S and Adepoju A. G (2016). Dimension of land use conversion in Ado-Ekiti Metropolis. *International Journal of Computational Engineering Research*, 6(2): 12 – 21
- Ayadiuno, R. U., Ndulue, D. C and Mozie, A. T (2022).A geomorphological survey and landscape analysis of Anambra State Southeast Nigeria.*Journal of Geography, Environment and Earth Science International* 26(2): 39-58
- Bassey, S.and Eteng, S. U. (2021). Ownership of commercial motorcycle mode of transportation to socioeconomic development of Yakurr Local Government Area, Cross River State, Nigeria. *International Journal of Advances in Engineering and Management*, 3(7): 1779 -1788
- Etim, N. M. (2021). *Land use change in Ikot Ekpene Local Government Area*. M.Sc Dissertation. University of Uyo. 89p
- Etim, N., Itiat, C. and Attah, A. (2023). Population Dynamics and Land Use Characterization in Ikot Ekpene LGA, Nigeria. *International Journal of Developmental Studies and Environmental Monitoring* 2(2) 102-108. 10.5281/zenodo.10464134
- Ewah, E. F. (2021). *Assessment of Rural Transportation in Abi Local Government Area*. B.Tech Project. Cross River University of Technology.
- Jianchu, X., Jeff, F. and M. David (2015). Land Use Transition, Livelihoods and Environmental Science in Montane Mainland South East Asia. *Mountain Research and Development*, 26(3):278-284
- Jorinno Survey Services & Assoc. Nig., (2022). Digital Map Production, using remote sensing and GIS, Ihiala LGA, Anambra State, Nigeria.
- Lambin, E. and H. Geist (2006). Land Use and Land Cover Change: Local Processes and Global Impacts. *Springer Publication*, 222p.
- Martinez, J. and S. Suarez-Seone (2011). Modelling the Risk of Land Cover Change from Environmental and Socio-Economic Drivers in Heterogeneous and Changing landscapes: The Role of Uncertainty. *Landscape and Urban Planning*, 101(2):108 -119.
- Nwozor, A., Olanrewaju, J. and Modupe, B. (2019).National insecurity and the challenges of food security in Nigeria. *Academic Journal of Interdisciplinary Studies*, 8(4): 2281-4612.
- Ojikpong, B. E., Agbor, E. A. and Emri, S. I. (2016).The impact of building use conversion on residential accommodation in Calabar, Cross River State, Nigeria. *International Journal of Science, Environment and Technology*, 5(3): 1445 – 1462.
- Omang, B. U. (2022). *The effect of banditry, kidnapping and farmers/herdsmen conflict on food security in Nigeria: A case study of Nasarawa State*.M.Sc Thesis.National Open University of Nigeria. 98p.
- Opatoyinbo, O., Adepetu, A., and M. Abdullahi (2015). Population Growth and Urban land use Change along River Kaduna Floodplain. FIG working week 2015, Sofia, Bulgaria.

Udoh, D (2021). *Implications of urban sprawl in Uyo Metropolis of AkwaIbom State, Nigeria*. B.Tech Project. Cross River University of Technology. 87p.

Yaro, M., Obongha, E., Okon, A and Itam., E (2014). Agriculture in the urban fringe: Analysis of Calabar and its environs, Cross River State, Nigeria. *International Journal of Contemporary Research*, 4(9): 122-130.

Young, S., Benyamin, P., Jokisch, B., Oagneva, Y., and A. Grren (1991). Global Land Use/Cover: Assessment of Data and Some General Relationships. The Report of the ad-hoc Working group on Global Land Use Change, *Social Science Research Council*.