integrity Research Journals

Global Journal of Earth and Environmental Science
Volume 7(3), pages 50-58, October 2022
Article Number: 69C8CF7E1
ISSN: 2636-6002
https://doi.org/10.31248/GJEES2022.126
https://integrityresjournals.org/journal/GJEES

Full Length Research

The key challenges of the residents of Obiagu Shanty area in Enugu Metropolitan City, Nigeria

Udeogu, A. C. and Onwuadiochi, I. C.*

Department of Geography and Meteorology, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.

Corresponding author. Email: ci.onwuadiochi@unizik.edu.ng

Received 3rd September 2022; Accepted 1st October 2022

ABSTRACT: Due to the increase in urban population and exorbitant rent in urban areas, so many people tend to live in shanty dwellings. As a result of this, shanty residents are faced with many challenges. The study analysed the challenges faced by the residents of Obiagu Shanty Area in Enugu Metropolitan City, Nigeria, and aims to provide better retrofitting options. The data was obtained using a questionnaire survey. The statistical techniques employed to analyse the data are descriptive statistics (such as simple percentages, standard deviation and mean) and inferential statistics (Principal Component Analysis). The study indicates that the key challenges of the residents of Obiagu Shanty Area are: High rate of criminality/criminal activities, poor building structures and overcrowding/over-population. Therefore, the study recommends some retrofitting measures, such as the construction of modern houses with modern facilities and good sewage systems, the government partnering with private organisations to help in the retrofitting of facilities in the area, and regular public enlightenment programs to reduce the level of criminality and the number of badly behaved individuals, harlots, and drug traffickers in the area, amongst others.

Keywords: Degenerated area, main issues, retrofitting measures, urban area, urban regeneration.

INTRODUCTION

The Shanty town is a unique and long-standing urban residential space type and a global phenomenon that is commonly defined as uninhabitable informal housing and places populated by low-income, high-density populations (UN-Habitat, 2003; Yuan and Song, 2020). It is an area where there are many simple structures, large buildings, extended service life, poor quality housing, with accompanying concealed threats to building safety, defective function, and unsound supporting facilities (Momoh, 2016; Yuan and Song, 2020).

Rapid population increase, failure of urban infrastructure, and increasing rural-urban migration are all seen as important contributors to the emergence of shanty towns in developed country cities (UN-Habitat, 2016). In the industrialized world, 43% of urban people live in poor housing and environmental conditions, with dismal indoor sanitation, socioeconomic hardship, and shanty town tenure instability (UN-Habitat, 2006). As a result, the impact of poor planning and inefficient land use has expedited the formation of shanty communities in Nigeria (Pat-Mbano and Nwadiaro, 2012). People in huge African cities such as Addis Ababa, Ethiopia, are shifting to unplanned settlements and urban periphery, where land is cheaper, according to the UN-Habitat (2003) report.

In order to renew and rehabilitate shanty towns, urban regeneration is used worldwide. Urban regeneration has a whole lot of retrofitting options that help to uplift the lives of the shanty residents. In their view, Martins and Santos Pereira (2019) assert that urban regeneration can be viewed as a means of achieving desirable outcomes such as more intensive use of areas with good infrastructure, services, and jobs; avoidance of speculative retention of unused real estate properties; reduction of social and spatial inequalities between different areas of the city;

balanced distribution of costs and benefits in the urbanization process; socialization of gain. Urban regeneration is a process that aims to improve the quality of settlements and create the conditions for long-term, socially inclusive growth (De Medici *et al*., 2018). Urban regeneration can be defined as a complete and integrated vision and activity that leads to the settlement of urban problems and aims to enhance the economic, physical, social, and environmental conditions of a change-affected area through time (Tan and Altrock, 2016).

A study on regeneration in the Nigerian urban built environment was conducted by Dimuna and Omatsone (2010). The study looked into the elements that contribute to physical deterioration and infrastructure decay, which has resulted in the emergence of shanty and blight in metropolitan areas. It states that in order to prevent further decline, effective action on a broad front, such as urban regeneration of the built environment, is required. Shanty removal should be a priority, and families from these areas should be able to afford adequate housing. It further states that blights must be eradicated and that further spread must be avoided. According to the report, urban centres should provide citizens with a conducive, pleasant, and pleasing living environment. And, in order for this to happen, it is necessary to support a strong rural development programme, which includes the provision of basic infrastructure, facilities, and services in rural regions. These would boost rural industrialization and, as a result, act as growth poles and springboards for population redistribution and traffic patterns, as well as sustainable balancing development. The study found that Nigeria can still achieve sustainable human settlement if Nigerians are willing to adopt and practice excellent urban housekeeping rules and principles.

Egolum and Emoh (2017) conducted research on urban renewal concerns and challenges in a developing economy. The study listed the challenges of urbanization in most urban cities, including increased demand for urban services, such as housing, education, public health, and a generally decent living environment, loss of biodiversity and greenhouse gas emissions, warming, desertification, degradation of agricultural land, air and water pollution, environmental decay, slums, insanitary conditions, overcrowding, housing congestion, crime and violence, and Nigeria urban centres are characterized by a shanty-like atmosphere. It opines that planning, citizen sensitization/consultation or public hearings, land acquisition (revocation of rights of occupancy), displacement and relocation, site improvement and supporting facilities/infrastructure, disposition of improved land, and new construction/development are all steps involved in urban renewal. The study also notes that if our cities are to be competitive with those in industrialized economies or comparable developing economies, effective urban revitalization initiatives are required. Good and effective governance, enhanced infrastructural development, tying into international and national sustainable development programs, and a public-private partnership strategy (PPPS) are among the recommendations made by the study to address the issues and challenges facing urban city renewal efforts. In order to ensure a successful urban redevelopment strategy, the role of the estate surveyor and valuer involved in the valuation/assessment of the purchase price or the amount of compensation owed to each claimant was necessary.

Soyinka *et al.* (2016) investigated the use of 'smart infrastructure' in the Lagos metropolis in order to achieve sustainable urban development. The objectives of the study were to look at the residents' socioeconomic characteristics as well as assess the infrastructure, building uses, and environmental conditions in the study areas in connection to smart principles and smart infrastructure implementation. The result shows that building use is mostly for sprawl development, with informal settlement and inadequate infrastructure as the main concerns. Smart infrastructure approaches have been identified as being appropriate for attaining sustainable development in the study areas through smart interventions in the citizens' socioeconomic status, the environment, building uses, and basic facilities and services.

Oyinloye *et al*. (2017) used Geographical Information System (GIS) and Remote Sensing (RS) technologies in a post-classification to model possible land use changes in the area over time in their study of urban renewal strategies in developing nations: a focus on Makoko, Lagos State, Nigeria. They also employed questionnaires to extract information on infrastructural and socioeconomic variables in order to figure out what elements contributed to Makoko's physical state. The findings reveal that infrastructural provisions are falling behind and are overburdened and dilapidated. Because the lagoon generates a foul odour, the locals lacked appropriate environmental sanitation. It suggests that the region be completely redesigned in order to produce a habitable environment for long-term residential life.

Uwadiegwu (2013) researched the structural profile of the socioeconomic and housing difficulties of the shanty towns in Enugu City, Nigeria, focusing on five slum regions: Coal Camp, Obiagu, and Ogui Urban (core slum areas), Ngenevu, and Jamboree (peripheral slum areas). The study included 412 slum dwellers that were chosen at random from the study locations. The absence of housing amenities was identified as the most serious issue in the survey. Household size, unemployment and low income are listed first, followed by housing, tenancy, and security issues in that order. As a result, the study proposed that projects for slum development in Nigeria be phased in accordance with this pattern.

Ononugbo *et al.* (2010) used prepared questionnaires and oral interviews with policymakers, experts, bankers, and contractors to investigate the housing demands of low-income residents in Nigeria's Enugu metropolitan

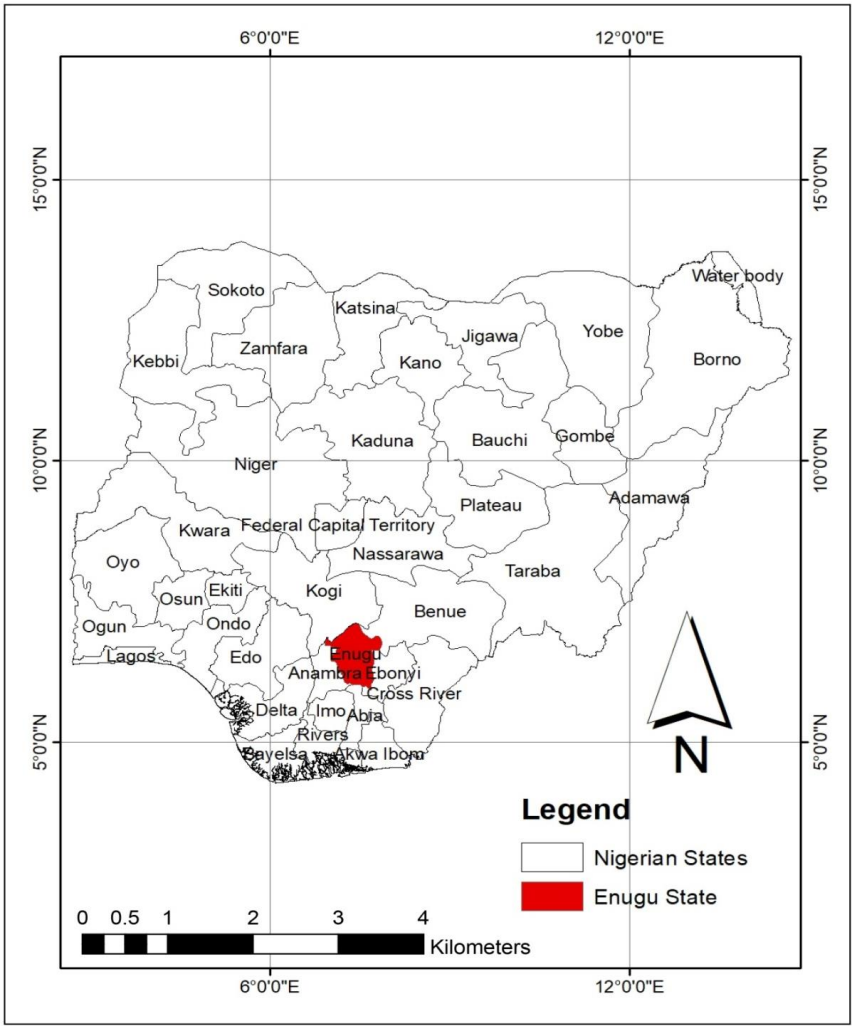

Figure 1. Map of Nigeria showing Enugu State (Source: Researchers' work).

districts. The study discovers that low-income groups were unable to afford rent in the city due to their low monthly salary (which was influenced by their educational background), large family size, and strict government land/housing rules, forcing them to live in slums with no infrastructural services, such as running clean water, garbage pickup, or sewage services. To avert environmental and health devastation caused by these populations in their shanty dwellings, low-income housing was needed in the Enugu Metropolitan areas of Nigeria, and the future study was needed in these locations.

More recent studies that thoroughly analysed the key challenges of the Obiagu Shanty Area are lacking, thus this study is necessary to determine the shanty area's present state. This study aims to fill this gap, bringing the situation on the ground to the fore. Furthermore, after outlining the numerous issues faced by the residents of Obiagu Shanty Area, this study highlights the key challenges faced by the population and thus recommends more effective retrofitting options.

MATERIALS AND METHODS

The study area

Enugu State is bordered to the north by the states of Benue and Kogi, to the south by the state of Abia, and to the west and east by the states of Anambra and Ebonyi (Enete and Ebenebe, 2009). Enugu metropolitan city is located between the latitudes 6°21'N and 6°30'N of the Equator and between the longitude 7°26'E and 7°37'E of the Greenwich Meridian and encompasses an area of about 145.8 square kilometres (Onwuadiochi *et al*., 2020).

Enugu metropolitan city is the capital of Enugu State and was previously the capital of the erstwhile Eastern Region (Enete and Ebenebe, 2009). The metropolitan city has three local government areas; Enugu North, Enugu South and Enugu East (Figure 2). Figure 1 shows that it is situated in the southeastern part of Nigeria. The name 'Enugu' comes from two Igbo words, 'Enu-Ugwu,' which means "top of the hill," referring to the city's mountainous terrain. Following Nigeria's independence in 1960, Enugu

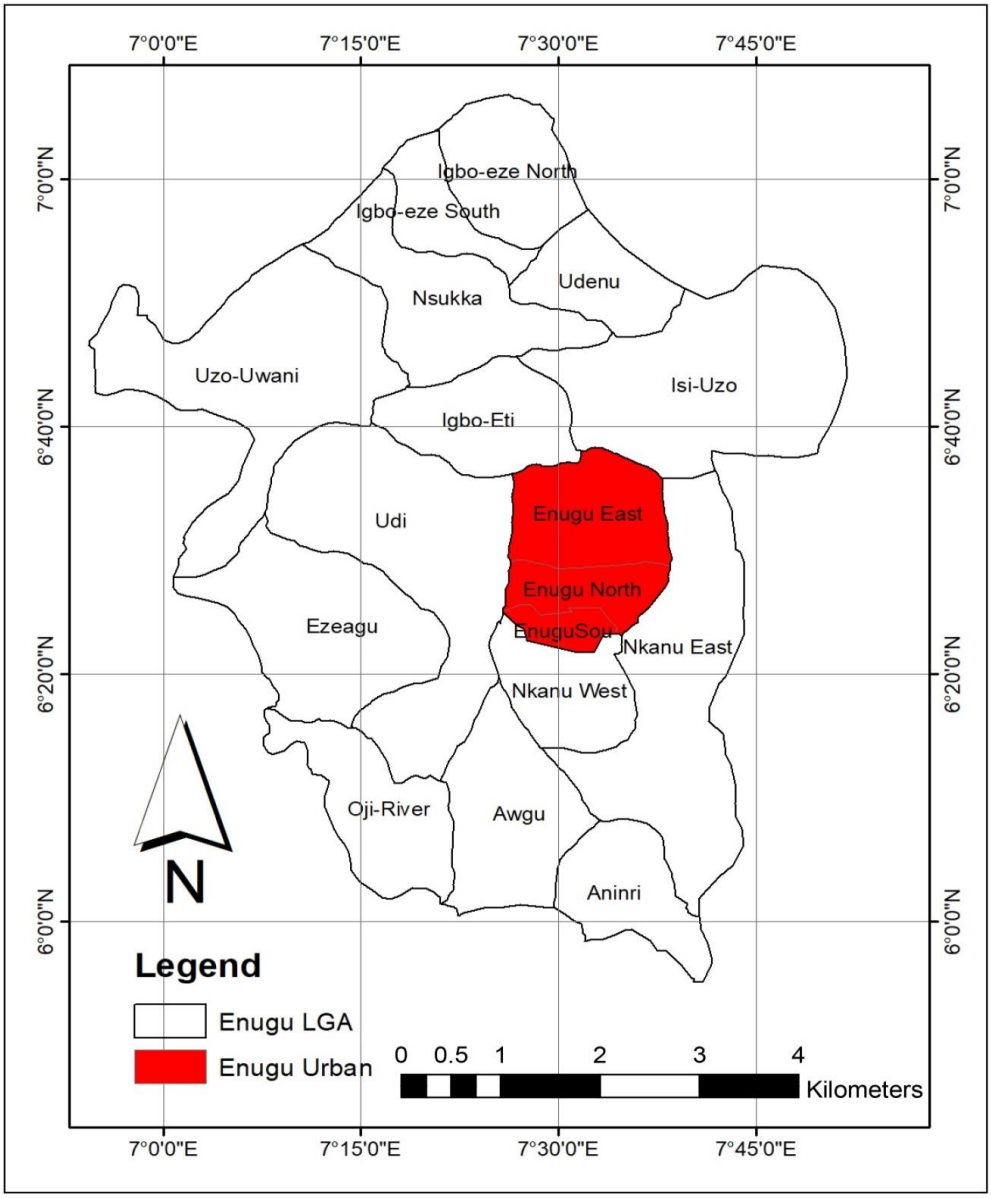

Figure 2. Map of Enugu State showing Enugu Metropolitan City (Source: Researchers' work).

became the capital of the Eastern Region; further territorial modifications in 1967, 1976, and 1991 resulted in Enugu becoming the capital of what is now Enugu State (Osaghae, 1998; Alapiki, 2005; Green, 2006; Berg, 2008). The annual rainfall is clustered around 1200 and 1900 mm, the maximum temperature is clustered around 29.1 and 33.9°C with a mean of 32.0°C, while the relative humidity stood at an average of 57.32% (Onwuadiochi *et al*., 2021).

Data collection

The data was obtained through a questionnaire survey. For reliability and proficiency in this study, a structured questionnaire of about 400 was administered to the residents of Obiagu Shanty Area, in Ogui New Layout, which is the study area (Figure 3). This provided insight to the challenges that the residents face.

Data analysis

At the end of the data collection process, all the codes and their corresponding data were entered into the collation sheet. The qualitative data from the Likert scale structured questionnaire response were coded using values such as 5, 4, 3, 2, and 1 for strongly agree, agree, undecided, disagree, and strongly disagree, respectively. These were further converted to quantitative data using weighted mean. This conversion enabled further analysis of the

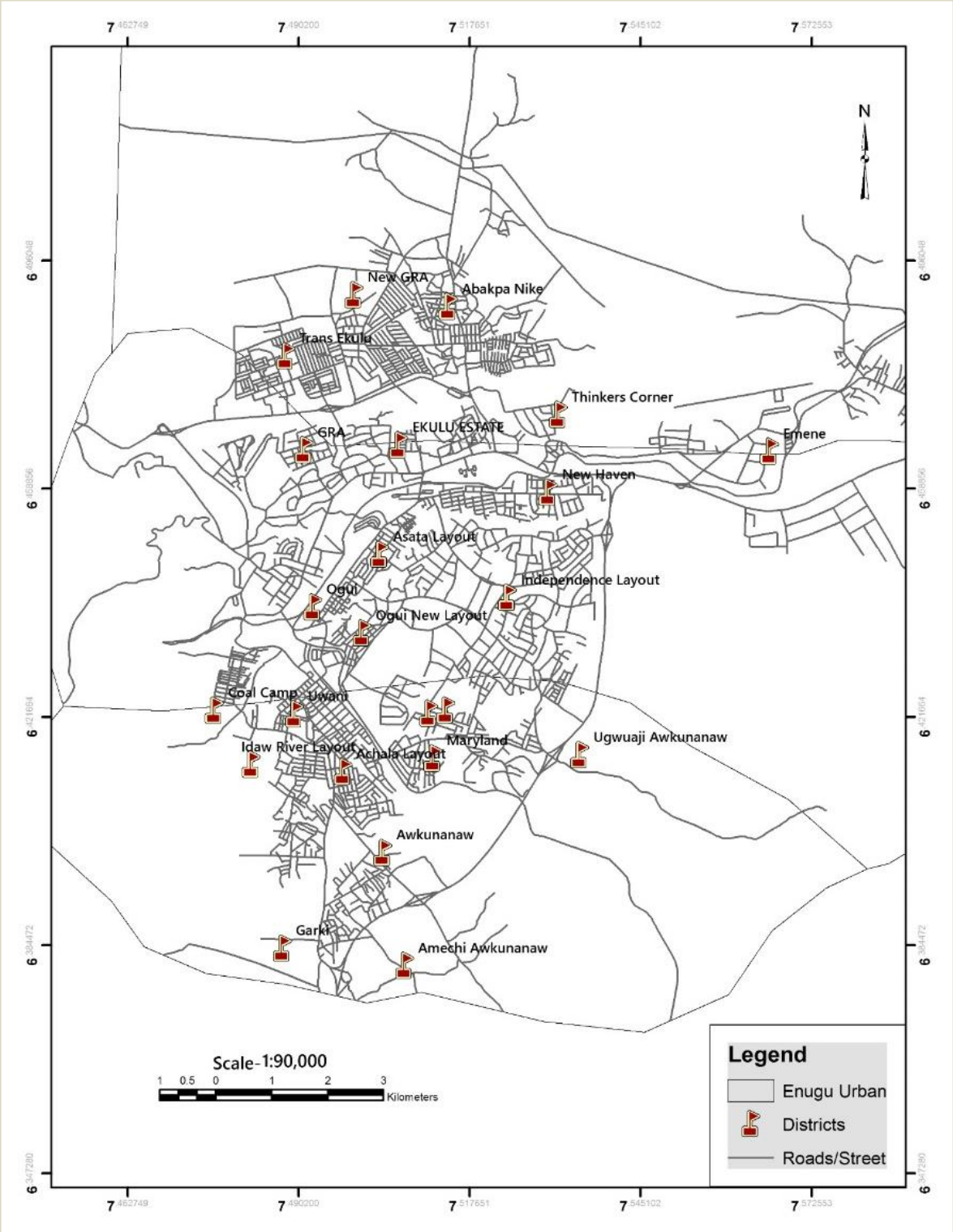

Figure 3. Map of Enugu Metropolitan City showing Obiagu Shanty area in Ogui New Layout (**Source:** Onwuadiochi et al., 2020).

generated data. The statistical techniques that were used to analyse the data obtained from the field are descriptive statistics (such as simple percentages, standard deviation and mean) and inferential statistics (such as Principal Component Analysis). The Principal Component Analysis (PCA) which is a data extraction technique was used to

Table 1. Presentation of the sample population.

Study area	NPC 1991	2022 projection	Sample population
Obiagu Shanty area	20,618	54,574	400

reduce the number of variables while retaining as much of the original variance as possible.

Sampling frame and techniques

A sample is the finite part of a statistical population whose properties are studied to gain knowledge about the whole. Hence, there are different types of sampling methods (random, judgmental, cluster or multi-stage, systematic, quota and random walk sampling). A simple random sampling technique was used to sample the population within the study area. The simple random technique permits (gives) each member of the population an equal chance of being selected.

The population of the study area was based on the 2022 projected figure of the 1991 National Population Census (NBS, 2007). The result of the 1991 census was used for the projection because the results of the 2006 census do not contain community level data. The projection of the sample population was based on the Enugu State population growth rate of 3.14% in 2022 using the formula:

$$P_{t+n} = P_t e^{rn} \quad (1)$$

Where: P_{t+n}=Future population (2022), P_t = Base year (present population, e = Exponential, r = Growth rate, n = Interval between future population and base year (2022-1991 = 31 years). This is shown in Table 1.

The sample size for this research was statistically determined using the “Taro Yamane” (1967) formula:

$$n = \frac{\mathrm{N}}{1+\mathrm{N(e)\hat{}2}} \quad (2)$$

Where: n = sample size, N = population size, e = level of significance (limit of tolerable error), that is 0.05(5%) and 1 = unity (a constant).

Using the sample frame formula with a 2022 projected population of 54,574, approximately 400 respondents were sampled at a 0.05 level of significance. The analytical package that was used is Statistical Package for Social Sciences (SPSS) version 25.0 for windows.

RESULTS AND DISCUSSION

Socio-demographic characteristics of the respondents

The researchers, with the help of research assistants distributed and retrieved a total of four hundred (400) copies of the questionnaire. The socio-demographic characteristics of the respondents are presented in Table 2.

Table 2. Socio-demographic characteristics of the respondents.

Socio-demographic characteristics	Statistical reports
Gender	
Male	52.8
Female	47.3
Age Group (years)	
18-24	23.2
25-34	25.0
35-44	16.5
45-54	22.8
55 and above	12.5
Level of Education	
O’level.	30.0
OND	22.0.
HND	20.0.
B.Sc.	17.5
PGD	5.0
M.Sc./MBA	3.8
PhD.	1.8

Source: Authors’ compilation from field survey, 2022.

There is almost an equal proportion of males and females in the study. The majority of the respondents are of aged 25-34 years, while the least were people aged 55 years and above. Also, as seen in the result, the level of education of the respondents cut across O’level, OND, HND, B.Sc., PGD, M.Sc./MBA and PhD with the percentage of people with O’level, OND and HND being higher in comparison with those with other degrees. Specifically, only about 1.8% of the respondents had PhD degrees.

Challenges of residents of Obiagu Shanty area

From the result in Table 3, it was affirmed that the outlined factors are challenges confronting residents of Obiagu Shanty Area (RII $\geq$ 60.00%). For effective, proper and inferential identification, the descriptive results as presented in Table 3 were subjected to factor analysis for extractions and further analysis. Before the principal component analysis proper, the test of interdependence (correlation) was performed. See the result in Table 4.

Table 3. Respondents identified challenges of residents of Obiagu Shanty area.

Challenges	5(SA)	4(A)	3(U)	2(D)	1(SD)	Mean	Std.	WiXi	RII
Poor community participation in remodeling & rehabilitation of structures in the area	250 (62.50%)	96 (24.00%)	7 (1.75%)	30 (7.50%)	17 (4.25%)	4.33	1.10	1732	86.60
Improper waste disposal and management system	369 (92.25%)	17 (4.25%)	3 (0.75%)	6 (1.50%)	5 (1.25%)	4.85	0.62	1939	96.95
High rate of criminality/criminal activities	378 (94.50%)	13 (3.25%)	2 (0.75%)	3 (0.75%)	4 (1.00%)	4.90	0.52	1958	97.90
Poor building structures	381 (95.25%)	10 (2.50%)	2 (0.75%)	3 (0.75%)	4 (1.00%)	4.90	0.51	1961	98.05
High rates of immorality, e.g., prostitution, drug abuse, drug trafficking, etc	352 (88.00%)	16 (4.00%)	3 (0.75%)	15 (3.75%)	14 (3.50%)	4.69	0.94	1877	93.85
Overcrowding/over-population	372 (93.00%)	15 (3.75%)	3 (0.75%)	5 (1.25%)	5 (1.25%)	4.86	0.60	1944	97.20
Lack of well-equipped primary and secondary schools	318 (79.50%)	30 (7.50%)	6 (1.50%)	25 (6.25%)	21 (5.25%)	4.50	1.13	1799	89.95
Non-availability of tertiary schools	297 (74.25%)	54 (13.50%)	9 (2.25%)	20 (5.00%)	20 (5.00%)	4.47	1.09	1788	89.40
Lack of standard markets	300 (75.00%)	45 (11.25%)	4 (1.00%)	26 (6.50%)	25 (6.25%)	4.42	1.19	1769	88.45
Poor road connections	340 (85.00%)	19 (4.75%)	6 (1.50%)	20 (5.00%)	15 (3.75%)	4.62	1.01	1849	92.45
Poor electricity supply	348 (87.00%)	20 (5.00%)	4 (1.00%)	15 (3.75%)	13 (3.25%)	4.69	0.92	1875	93.75
Lack of good drinking water; e.g., boreholes, pipe borne water, etc	360 (90.00%)	17 (4.25%)	4 (1.00%)	6 (1.50%)	13 (3.25%)	4.76	0.83	1905	95.25
Unavailability of open spaces and lack of sports materials for recreational activities	326 (81.50%)	21 (5.25%)	7 (1.75%)	27 (6.75%)	19 (4.75%)	4.52	1.12	1808	90.40
Unavailability of renewable and more sustainable energy sources, such as solar energy, wind energy, etc.	335 (83.75%)	21 (5.25%)	5 (1.25%)	25 (6.25%)	14 (3.50%)	4.60	1.03	1838	91.90

Source: Authors' compilation from field survey, 2022.

Table 4. Correlation Matrix of test of Interdependence.

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14
X1	1.00													
X2	0.950	1.00												
X3	0.948	1.00	1.00											
X4	0.945	1.00	1.00	1.00										
X5	0.946	1.00	1.00	1.00	1.00									
X6	0.949	1.00	1.00	1.00	1.00	1.00								
X7	0.955	0.999	0.999	0.998	0.999	0.999	1.00							
X8	0.977	0.994	0.994	0.993	0.993	0.994	0.996	1.00						
X9	0.969	0.996	0.995	0.995	0.996	0.996	0.998	0.999	1.00					
X10	0.947	0.999	0.999	0.999	1.00	0.999	0.999	0.993	0.996	1.00				
X11	0.950	1.00	1.00	1.00	1.00	1.00	1.00	0.994	0.997	1.00	1.00			
X12	0.948	1.00	1.00	1.00	1.00	1.00	0.999	0.994	0.996	0.999	1.00	1.00		
X13	0.945	0.999	0.999	0.999	1.00	0.999	0.999	0.992	0.996	1.00	1.00	0.999	1.00	
X14	0.948	0.999	0.999	0.999	1.00	0.999	1.00	0.993	0.997	1.00	1.00	0.999	1.00	1.00

Key: X_1 =Poor community participation in remodeling and rehabilitation of structures in the area; X_2=Improper waste disposal and management system; X_3=High rate of criminality/criminal activities; X_4 = Poor building structures; X_5=High rates of immorality, e.g., prostitution, drug abuse, drug trafficking, etc; X_6=Overcrowding/over-population; X_7=Lack of well-equipped primary and secondary schools; X_8=Non-availability of tertiary schools; X_9=Scope creep, Lack of standard markets; X_{10}=Poor road connections; X_{11}=Poor electricity supply; X_{12}=Lack of good drinking water; e.g., boreholes, pipe borne water, etc; X_{13}=Unavailability of open spaces and lack of sports materials for recreational activities; X_{14}=Unavailability of renewable and more sustainable energy sources, such as solar energy, wind energy, etc (**Source:** Authors' SPSS 25.0 output).

Table 5. Factor analysis result.

Factors	Component			% Age extraction
	1	2	3	
Poor community participation in remodeling and rehabilitation of structures in the area	0.761	0.133	-0.007	0.920
Improper waste disposal and management system	-0.797	0.231	0.062	0.999
High rate of criminality/criminal activities	**0.880**	0.143	-0.101	0.998
Poor building structures	0.688	**0.355**	0.011	0.998
High rates of immorality, e.g., prostitution, drug abuse, drug trafficking, etc	0.682	0.208	-0.109	0.998
Overcrowding/over-population	0.582	-0.210	0.364	0.998
Lack of well-equipped primary and secondary schools	0.771	0.266	-0.220	0.999
Non-availability of tertiary schools	0.784	0.241	0.166	0.994
Lack of standard markets	0.597	0.189	0.225	0.997
Poor road connections	0.699	-0.106	0.035	0.998
Poor electricity supply	0.690	0.043	0.001	0.999
Lack of good drinking water; e.g., boreholes, pipe borne water, etc	0.799	0.174	-0.048	0.998
Unavailability of open spaces and lack of sports materials for recreational activities	0.692	-0.133	0.342	0.997
Unavailability of renewable and more sustainable energy sources, such as solar energy, wind energy, etc.	0.769	0.252	0.120	0.998
Eigenvalue	**8.252**	**3.014**	**1.960**	
% Age of variance	**63.044**	**27.532**	**8.650**	
Cumulative %age	**52.041**	**90.576**	**99.226**	

Source: Authors' SPSS 25.0 output.

The result of the test of interdependence among the various factors challenging residents of Obiagu Shanty Area indicates that the factors are highly correlated (with a partial correlation coefficient (r_i) ≥ 0.60)); therefore, there is the presence of an autocorrelation problem which confirms the appropriateness of extraction/reduction (factor) analysis. The result of the factor analysis is presented in Table 5.

The Principal Component Analysis (PCA) result in Table 5 indicates that the key challenges of residents of Obiagu Shanty Area are: the high rate of criminality/criminal activities, poor building structures and overcrowding/over-population. The key factors collectively contribute about 99.23% of the entire challenges in the area. Specifically, a high rate of criminality/criminal activities contributes about 63.04%, poor building structures contribute about 27.53% while overcrowding/over-population contributes about 8.65% of the entire challenges affecting the people in the area. The findings concur with the United Nations Habitat (2016), that severe overcrowding is an urgent concern in Kibera, where families of eight or more frequently reside in basic homes made of mud with a corrugated tin roof. It also agrees with Cities Alliance (2006), which defines shanty areas as neglected urban areas with horrendously subpar housing and living conditions. Furthermore, it is in line with Ekpenyong and Mathias (2019), that discovered that the youth crime rate in the shanties of Bayelsa State is worrying.

Conclusion and Recommendation

The study reveals the key challenges that residents of the Obiagu Shanty Area face. These include a high rate of criminality/criminal activities, poor building structures and overcrowding/over-population. However, this shows a poor livability standard in the Obiagu Shanty Area, and therefore, the study shows that there is a need for better retrofitting measures in the area. Based on the findings, the study proposed the following recommendations:

1. Government can partner with private organisations to help in retrofitting the facilities in the area.
2. Wealthy community members can render some help by retrofitting and building some public facilities in the area.
3. Modern houses with modern facilities and good sewage systems should be constructed by the government at the Obiagu Shanty Area.
4. The residents of Obiagu Shanty Area should be properly sensitised about the harmful health consequences of living in a dirty environment.
5. Regular public enlightenment programs should be carried out to reduce the level of criminality and the number of badly behaved individuals, harlots, and drug traffickers in the area.
6. Scholarship programs should be initiated in the area in order to reduce the number of out-of-school children.

7. The government, private organisations/individuals, and the community are all encouraged to work together to provide enough infrastructures, such as more standard schools, standard open areas for recreational activities, and renewable and more sustainable energy sources, among other things.

CONFLICTS OF INTEREST

The authors declare that they have no conflict of interest.

REFERENCES

Alapiki, H. (2005) State creation in Nigeria: Failed approaches to national integration and local autonomy. African studies review. *African Studies Association, 48*(3),49-65.

Berg, J. S. (2008). *Broadcasting on the short waves, 1945 to today.* Mc Farland. p. 177.

Cities Alliance (2006). Cities alliance for cities without slums: Action plan for moving slum upgrading to scale. Cities Alliance, Washington, DC.

De Medici, S., Riganti, P., & Viola, S. (2018). Circular economy and the role of universities in urban regeneration: the case of Ortigia, Syracuse. *Sustainability*, *10*(11), Article number 4305.

Dimuna, K. O., & Omatsone, M. E. O. (2010). Regeneration in the Nigerian urban built environment. *Journal of Human Ecology, 29*(2), 141-149.

Egolum, C. C., & Emoh, F. I. (2017). The issues and challenges of urban renewal in a developing economy. *International Journal of Development and Economic Sustainability, 5*(1), 32-44.

Ekpenyong, N. S., & Mathias, G. N. (2019) Urban slums and youth criminality in Bayelsa State Nigeria: A study of selected slums settlements in Yenagoa metropolis. *International Journal of Development Strategies in Humanities, Management and Social Sciences, 9*(4), 166-185.

Enete, I. C., & Ebenebe, I. N. (2009) Analysis of rainfall distribution over Enugu during the little dry season (1990-2005). *Journal of Geography and Regional Planning, 2*(7), 182-189.

Green, R. (2006). *The Commonwealth yearbook 2006*. Nexus Strategic Partnerships Ltd. p. 54.

Martins, M. L. R., & Santos Pereira, A. L. D. (2019). Urban Regeneration in the Brazilian urban policy agenda. *European Planning Studies*, *27*(6), 1129-1145.

Momoh, J. U. (2016). Sustainable urbanism and its assessment in developing countries: The Nigerian case. A thesis submitted in partial fulfilment of the requirements of Nottingham Trent University for the degree of Doctor of Philosophy.

National Bureau of Statistics of Nigeria (NBS) (2007). 2006 population census. Abuja: National Bureau of Statistics.

Ononugbo, V. I., Akpan, A. I., Osho, G. S., & Kritsonis, W. A. (2010). Housing needs for the low-income people of Enugu metropolitan areas of Nigeria: Policy issues and challenges. *International Journal of Management, Business, and Administration*, 13(1), 1-41.

Onwuadiochi, I. C., Igu, N. I., Enete, I. C., & Ozoemene, M. L. (2020). Modeling the trends and causal interaction among key selected microclimatic elements in Enugu Urban. *IOSR Journal of Environmental Science, Toxicology and Food Technology, 14*(6), 9-21.

Onwuadiochi, I. C., Mage, J. O., & Agulue, E. I. (2021). An assessment of the characteristics and distribution of microclimatic elements in Enugu Urban. *Journal of Geography Meteorology and Environment*, *4*(1), 22-38.

Osaghae, E. E. (1998) *Crippled giant: Nigeria since independence*. C. Hurst & Co. Publishers. p. 85. Oyinloye, M. A., Olamiju, I. O., & Popoola, O. O. (2017). Urban renewal strategies in developing nations: A focus on Makoko, Lagos State, Nigeria. *Journal of Geography and Regional Planning, 10*(8), 229-241.

Pat-Mbano, E., & Nwadiaro, E. C. C. (2012). The rise of urban slum in Nigeria: implications on the urban landscape. *International Journal of Development and Management Review*, *7*(1), 257- 269.

Soyinka, O., Siu, K. W. M., Lawanson, T., & Adeniji, O., (2016). Assessing smart infrastructure for sustainable urban development in the Lagos metropolis. *Journal of Urban Management, 5*(2), 52-64.

Tan, X., & Altrock, U. (2016). Struggling for an adaptive strategy? Discourse analysis of urban regeneration processes–A case study of Enning Road in Guangzhou City. *Habitat International*, *56*, 245-257.

UN-Habitat (2003). The challenge of slums: Global report on human settlements. London: Earthscan.

UN-Habitat (2006). State of the world's cities 2006/2007. The millennium development goals and urban sustainability. London: Earthscan.

UN-Habitat (2016). World cities report 2016: Urbanization and development–emerging futures. UN-Habitat.

Uwadiegwu, B. O. (2013). The structural profile of the socio economic and housing problems of the slum areas in Enugu City, Nigeria: An insider's perception. *The International Journal of Engineering and Science, 2*(3), 8-14.

Yuan, Y., & Song, W. (2020). Mechanism and Effect of Shantytown Reconstruction under Balanced and Full Development: A Case Study of Nanjing, China. *Sustainability*, *12*(19), Article number 7979.