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Original Research Article

Analysis of Spatial Distribution Pattern of Urban Poverty in Uyo, Akwa Ibom State, Nigeria

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Abstract

This study analysed the spatial distribution of urban poverty in Uyo, Akwa Ibom. This research had three objectives and two hypotheses. This study used stratified and simple random sampling techniques to gather data through questionnaires and observations. Descriptive and inferential statistical analyses were performed on the collected data. The study found that poverty determinants in Uyo included education, occupation, source of income, housing conditions, household expenditure, medical facilities, sources of water, and power supply. The researchers tested two hypotheses using ANOVA, which found a significant difference in the spatial distribution of poor urban residents in Uyo, but no significant difference in the causes and consequences of poor residential districts. This study estimated Uyo's poverty line as ₦11,768.3 using 2/3 of the mean household expenditure of residents. The study also used the spatial interpolation technique in ArcGIS 10.3 software to design a map of Uyo showing the spatial distribution pattern of urban poverty, revealing that Oku and Ikono had high levels of poverty, while Offot and Etoi had the least. The study suggested the need for infrastructural development and enhancement of human capital through training in life skills and vocations to stimulate the innate entrepreneurial potential of people, expand their income-generating capacities, and become more productive.

Keywords: Poverty Mapping; Spatial Distribution; Urban Poverty; Urbanization.

INTRODUCTION

Poverty, particularly urban poverty, is a global concern closely linked to human capital development. Urban poverty is a complex and multidimensional phenomenon characterised by a lack of income and opportunities to generate income, deprivation of necessities, inadequate infrastructure, and exclusion from social and political decision-making (Chronic Poverty Research Centre, 2004; Obayelu and Awoyemi, 2010; Samuels *et al*., 2011). Urban poverty affects both developed and developing countries (Bird *et al*., 2010) and is prevalent not only in underdeveloped and developing countries but also in developed countries. For example, the United States has the highest poverty rate among developed nations and poverty is strongly connected to race and ethnicity. African Americans, Hispanic Americans, American Indians, and Alaska natives are three times more likely to live in poverty than white Americans (U.S.). Census Bureau, Income, Poverty, and Health Insurance Coverage in the United States, 2004–August 2005).

The poor in urban areas of developed countries often live without basic utilities and are often food insecure or homeless. The poor in sub-Saharan Africa make up most of the global poor, and growth processes in developing countries often lead to the incomes of the poor increasing much less than the average, forcing the urban poor to live in illegal and informal settlements because they cannot enter the formal land and housing markets (Ekpo & Uwatt, 2005). Sub-Saharan Africa has the highest poverty rate, with extreme poverty showing few signs of improvement. The urban poor in developing countries are also forced to live in illegal and informal settlements because they cannot enter the formal land and housing markets (Ekpo & Uwatt, 2005).

According to a 2010 World Bank survey, urban poverty in Nigeria has increased more severely than rural poverty because of factors such as a high population growth rate, rural-urban migration, and inner-urban decay (Adebayo, 2013). Poverty in Nigeria is multidimensional, affecting both rural and urban areas, and is characterised by a lack of purchasing power, exposure to risk, malnutrition, high mortality rate, low life expectancy, and insufficient access to social and

economic services (Obayelu and Awoyemi, 2010; Nigerian Bureau of Statistics, 2010; Sowunmi *et. al.*, 2012). The Millennium Development Goals and various studies have recommended the formulation and implementation of policies by the government to address urban poverty, including providing employment, housing, education, and improved healthcare.

Uyo, the capital of Akwa Ibom State, faces a range of issues including poor urban planning, inadequate infrastructure, unreliable power supply, flooding, and erosion. These problems have been exacerbated by rural-urban and urban-urban migration, leading to increased poverty among the population. Uyo has a rich history, serving as a district headquarters in the Southern Protectorate, a third-class township under the township ordinance of 1917, and the administrative headquarters of the Uyo province in Eastern Nigeria. The rapid growth of Uyo as a local government headquarters, state capital, and regional centre has led to significant spatial changes and a high rate of net migration, contributing to urban poverty. The massive urbanisation of Uyo, since it became the state capital, has led to the encroachment of green areas and marginal lands, further exacerbating the issue of poverty. This study aims to analyse the spatial distribution of urban poverty in Uyo, determine the poverty level of residents based on their socioeconomic status, and recommend appropriate poverty alleviation measures.

Specifically, This Study Proposes to Achieve the Following:

1. Examine the spatial distribution of poor residential districts in the Uyo L.G.A.
2. To determine whether there are any significant differences in the spatial distribution of poor urban residents in Uyo.
3. Examining the socioeconomic characteristics of the residents of the identified poor residential districts.
4. To determine whether there were any significant differences in the causes and consequences of poor residential districts among neighbourhoods in the study area.

Research Hypotheses

1. There are no significant differences in the spatial distribution of urban poor residents in Uyo
2. There are no significant differences in the causes and consequences of poor residential districts in the study area

RESEARCH METHOD

Research Design

This study uses a descriptive survey design to collect both qualitative and quantitative data for one case at a particular point in time. This approach was chosen because it allowed for a more comprehensive and insightful understanding of the case.

Type of Data

The data obtained consisted of the following sets.

1) Data on the socioeconomic characteristics of the respondents were collected using a structured questionnaire and oral interviews.
2) Data on the causes and consequences of poverty were collected through structured questionnaires and oral interviews.
3) Data on respondent locations (latitude and longitude) were captured using a Global Positioning System (GPS).
4) Land use and land cover information of the study area was extracted from Landsat 8 imagery (30m × 30m resolution) obtained from the United States Geological Survey (USGS).

Sources of Data

The data sources available for this study are as follows:

i. A secondary source of data
ii. The primary source of data

DATA COLLECTION

The data used in this study were collected for 24 working days (14 December 2020 to 29 January 2021 [excluding public holidays]) using a questionnaire. The questionnaire was designed to be easy to understand and answer and included both closed- and open-ended questions. The closed-ended questions helped the researchers gather specific information, whereas the open-ended questions allowed respondents to express their opinions more freely. The data collected from the questionnaire included demographic information such as age, marital status, and educational attainment, as well as respondents' opinions on the causes, consequences, and solutions to poverty. A Global Positioning System was used to obtain the coordinates of respondents' locations. This aided in poverty mapping, based on the poverty index of each respondent per location. In addition to the questionnaire, personal observations were conducted in which photographs were taken. These include housing quality, the nature of roads, infrastructural decay, and environmental status (flood and erosion sites). The population for this study was the 2018 projected population of the Uyo Local Government Area (LGA) in Akwa Ibom State, Nigeria. From a base population of 305, 961 for the LGA, as in the 2006 census, a projected population of 390,100 was obtained for 2018.

Sampling Technique

A stratified and simple random sampling technique was used to select the households for this study. The study population was stratified into four clans (Etoi, Offot, Oku, and Ikono). A simple random sample of 100 households was selected for each clan. This ensured that all households had an equal chance of being

selected and that the sample was representative of the population.

The Technique of Data Analysis

Descriptive statistics, such as tables, frequencies, percentages, and charts, were used to describe the socio-demographic characteristics of the respondents and the distribution of responses, while inferential statistics (Analysis of Variance ANOVA) were employed to test the two formulated hypotheses.

Determining Poverty Level in Uyo

There are many methods for measuring poverty, including living standards, poverty lines, food energy intake, and headcount ratio. The World Bank defines extreme poverty as living on less than US$1 per day, and moderate poverty as living on less than US$2 per day. This study used these definitions to classify residents as either extremely poor or moderately poor, based on their daily income.

Derivation of the Poverty Line

The first step in measuring poverty is determining the poverty line. The poverty line is the amount of money a household needs to spend to meet its basic needs. In this study, the poverty line is calculated as two-thirds of the average household expenditure in Uyo. This was determined by surveying households across all the clans in Uyo. In addition to household expenditure, other factors considered in determining poverty level include socioeconomic status, type of toilet, source of water, access to power supply, means of transportation, type of medical facilities, housing type, road network, and nutritional levels.

Mapping (Spatial Pattern Analysis) of Poverty

A poverty map for Uyo was created by collecting data on the poverty levels of households in the city. The data were then used to create a spatial interpolation model, using the minimum variance method to calculate the weight of each point in the model. This method also relies on spatial autocorrelation, which states that the points near each other are similar. The resulting poverty map shows the spatial distribution of poor residents in Uyo.

RESULTS AND DISCUSSION

Monthly household expenditure as a determinant of the poverty line in Uyo

Based on available empirical studies, the poverty line in any given location is calculated as 2/3 of the average household expenditure of residents in that geographical location (Etim and Edet, 2013; Natan and Lawrence, 2005; Olayemi, 2013). A summary of the average household expenditures of respondents across all clans in Uyo is presented in Table 1.

Table 1: Monthly Household Expenditure of Respondents

	Food	Clothing	Energy	transport	Health care	Education	Water	Others	Average Expenditure
Etoi	41500	29500	25600	18500	12500	37900	8000	5500	22375
Offot	45500	37500	25200	19800	20500	41000	6500	4300	25037.5
Oku	15300	15430	16300	12350	8400	15500	2500	3000	11097.5
Ikono	30000	14500	10400	10200	9400	15800	3100	3400	12100
Aver. Exp.	33075	24232.5	19375	15212.5	12700	27550	5025	4050	17652.5
% Expenditure	23.42	17.16	13.72	10.77	8.99	19.51	3.56	2.87	100.00

Source: Author's Fieldwork, August 2019.

Mean Expenditure = ₦17652.5

2/3 of the Mean Expenditure = ₦11,768.3

Therefore, the poverty line in Uyo was estimated to be ₦11,768.3

The table shows the monthly household expenditures of respondents in four different communities in Nigeria. The average expenditure for all communities was 17652.5 naira. Etoi has the highest average expenditure of 22375 naira, followed by Offot with 25037.5 naira, Okhu with 11097.5 naira, and Ikono with 12100 naira. Food is the largest expense for all communities, followed by clothing, energy, transportation, healthcare, education, and water. The percentage of expenditure in each category varied by community; however, food was always the largest expense.

To estimate the poverty indices of the study areas, we measured the well-being of the individual heads of households in the study area through their total consumption expenditure. Having established the individual heads of households' consumption expenditure, a cut-off point that served as the poverty line, using the mean per capita expenditure of the whole population under study, was established at ₦11,768.3 a month per adult equivalent. Therefore, following the poverty line, it is pertinent to estimate the spatial distribution of poor urban residents in the study area. That is, to understand the part of Uyo that is mostly affected by poverty.

First, we studied land use areas using GIS. The geographic information is presented in Table 2 and Fig. 1. From the analysis of the satellite imagery of 2019 in Fig. 1, the results of the image classification identified four land use/land cover classes: secondary forest, scattered/cultivated farmland, bare surface, and built-up. However, secondary forest occupied 55.6 km (26 per cent), scattered farmland occupied 48.1 km (22.7 per cent), bare surface occupied 36.9 km (17.4 per cent) and built-up areas covered 71 km (33.6 per cent). This analysis shows that built-up land was the only land cover that occupied the largest proportion of land cover in the study area, followed by secondary forest which dominated the remote part of Uyo, followed by secondary farmlands, while the bare surface was sparsely distributed in its various positions, but not so overwhelming.

Relating this to the spatial distribution of poor residential areas in Uyo, it can be deduced that built-up areas denote places of high buildings, infrastructure, and a high level of economic development compared with secondary forests which are mostly seen in remote areas with low economic development (poverty-prone areas). Critically, the land use/land cover map shows that built-up areas are mostly dominant in part of Etoi, followed by the Offot and Ikono clans, whereas Oku is the least dominant. Similarly, the secondary forest was dominant on the Oku clan axis compared to Etoi and Offot which recorded a low secondary forest. This is not unconnected to the fact that the Oku Clan is not well developed in terms of infrastructure and economic development compared to Etoi and Offot.

Table 2: Percentage of 2019 Land Use/Land Cover status of Uyo

Land use type	Class count	Areas (km)	Percentage (%)
Secondary forest	61738	55.6	26.3
Scattered farmland	53426	48.1	22.7
Bare surface	40993	36.9	17.4
Built-Up Areas	78892	71.0	33.6
Total	**235049**	**211.6**	**100**

[Extracted from 2019 Landsat 8 Imagery of Uyo 30m by 30m Resolution from usgs]

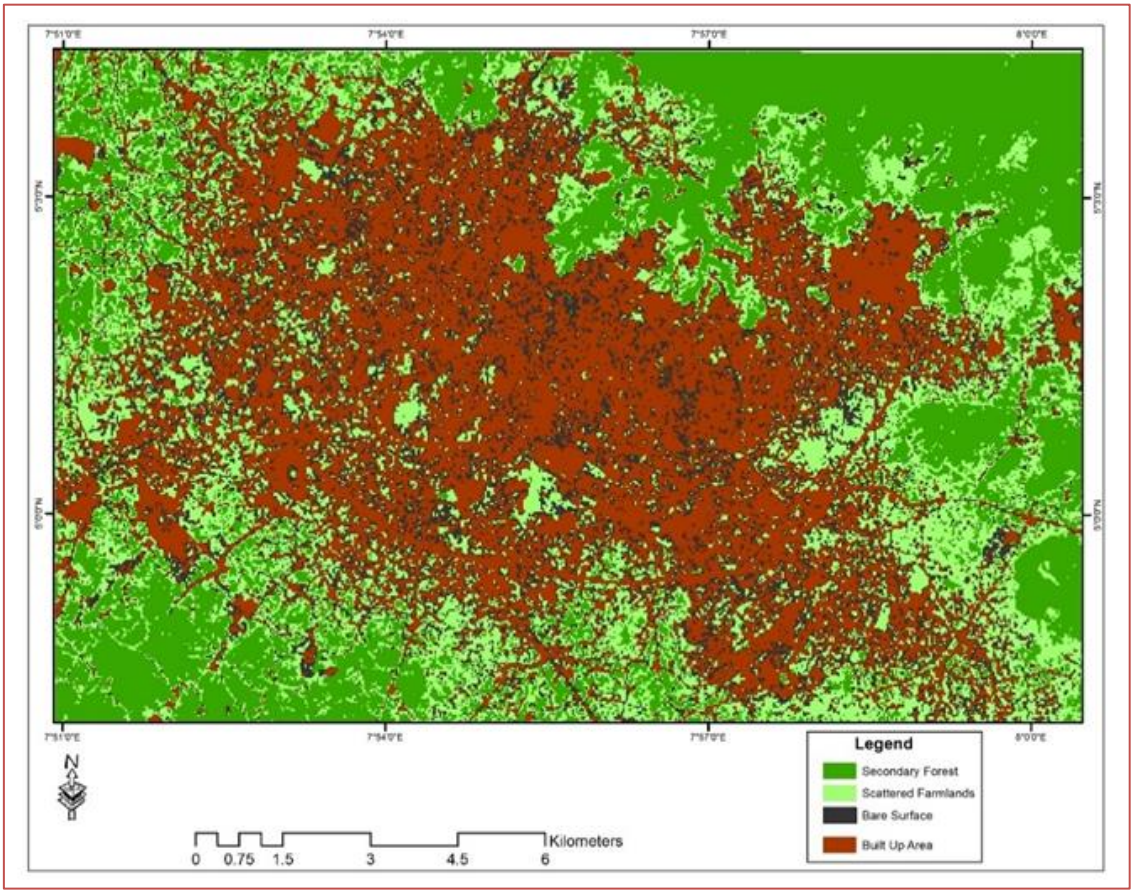


Fig 1: Land Use/Land Cover Pattern of Uyo
[Extracted from 2019 Landsat 8 Imagery of Uyo 30m by 30m Resolution from usgs]

Hypothesis One:

There were no significant differences in the spatial distribution of poor urban residents in Uyo. One-way Analysis of Variance (ANOVA) was used to compare the average household expenditures of the respondents across all clans. This is because the statistical technique makes it possible to compare the mean differences in the average household expenditure of more than two independent variables (in this case, the four clans in Uyo) in the study area. The results are presented in Tables 3 and 4, respectively.

Table 3: ANOVA result showing the significant differences in the spatial distribution of urban poor residents in Uyo

	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Between Groups	45938383193.087	3	15312794397.696	330.820	.000
Within Groups	18329789581.010	396	46287347.427		
Total	64268172774.097	399			

Table 4: LSD Multiple Comparisons of Hypothesis One Result from SPSS

Dependent Variable: Household's Expenditure						
LSD						
(I) Clans	(J) Clans	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Etoi Clan	Offot Clan	-17512.81000*	962.15744	.000	-19404.3852	-15621.2348
	Oku Clan	8719.23000*	962.15744	.000	6827.6548	10610.8052
	Ikono Clan	8755.61000*	962.15744	.000	6864.0348	10647.1852
Offot Clan	Etoi Clan	17512.81000*	962.15744	.000	15621.2348	19404.3852
	Oku Clan	26232.04000*	962.15744	.000	24340.4648	28123.6152
	Ikono Clan	26268.42000*	962.15744	.000	24376.8448	28159.9952
Oku Clan	Etoi Clan	-8719.23000*	962.15744	.000	-10610.8052	-6827.6548
	Offot Clan	-26232.04000*	962.15744	.000	-28123.6152	-24340.4648
	Ikono Clan	36.38000	962.15744	.970	-1855.1952	1927.9552
Ikono Clan	Etoi Clan	-8755.61000*	962.15744	.000	-10647.1852	-6864.0348
	Offot Clan	-26268.42000*	962.15744	.000	-28159.9952	-24376.8448
	Oku Clan	-36.38000	962.15744	.970	-1927.9552	1855.1952
*. The mean difference is significant at the 0.05 level.						

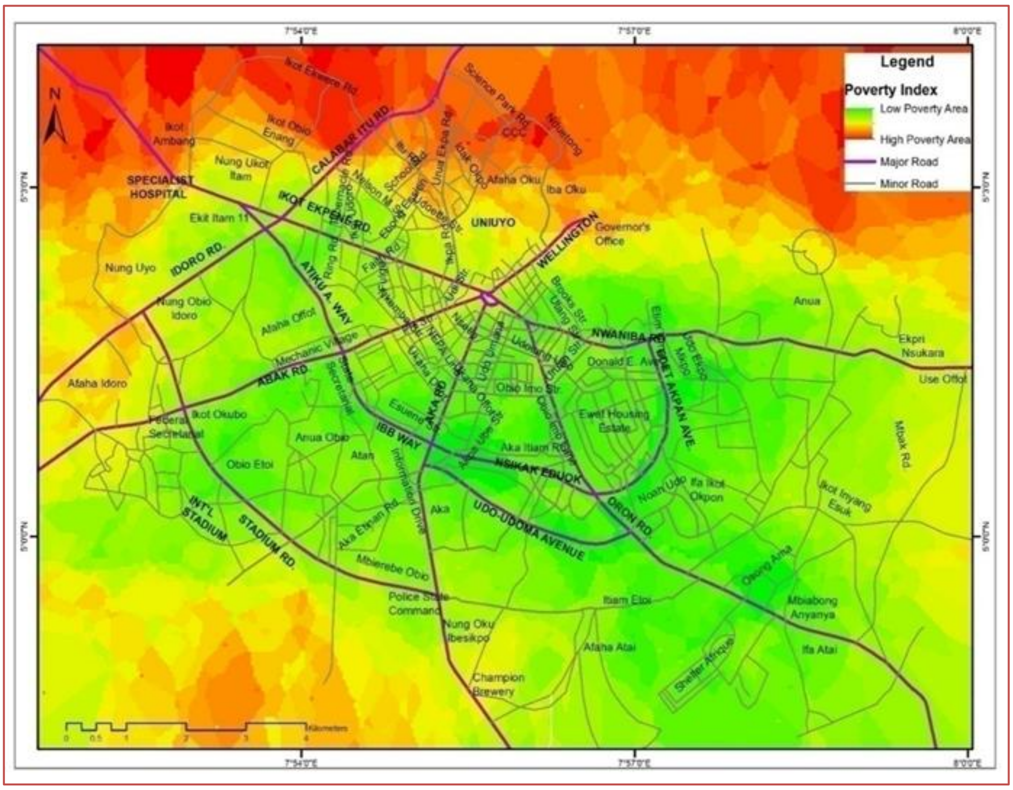
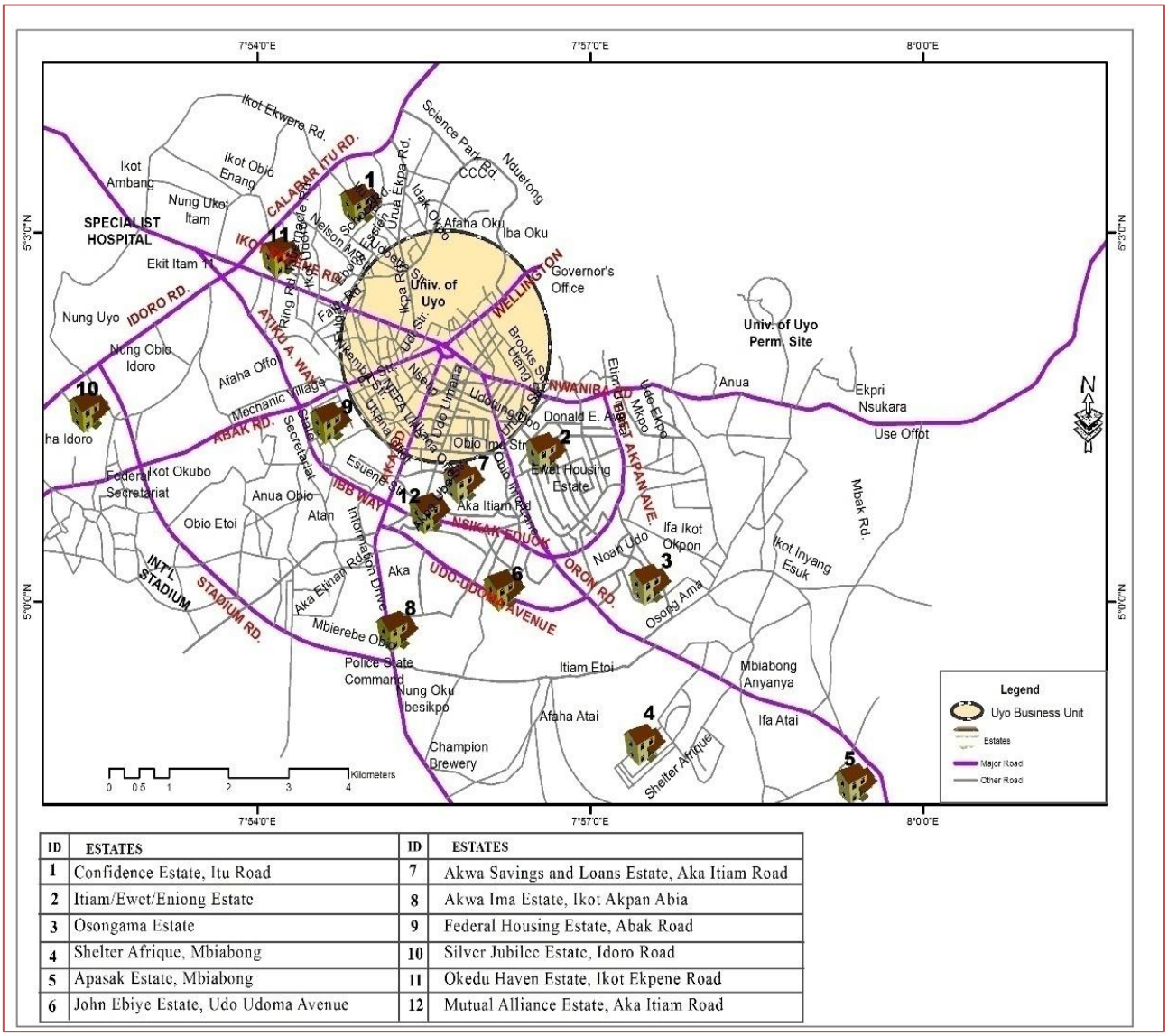


Fig. 2: Spatial distribution of Urban Poor Residents in Uyo

From Table 3, the result gave the calculated F-value is 330.820 with three and 396 degrees of freedom and a p-value of 0.000. The level of significance ($P < 0.05$) implies that the mean poverty levels of the four clans were not the same. Hence, H_0 was rejected, and it can be concluded that there is a significant difference in the spatial distribution of poor urban residents in Uyo. Furthermore, the results in the multiple comparison table (Table 4) show that the Etoi clan was significantly different from other clans such as the Offot clan; it was only observed that the Oku clan was not significantly different from the Ikono clan. This implies that the poverty level was significantly higher in the Oku and Ikono clans, whereas it was the least experienced in the Etoi and Offot clans. In summary, the results showed that poor urban residents were mostly found in the Oku and Ikono clans (Researcher Field Survey, 2019). The spatial variations are shown in Fig. 2. The figure clearly shows that the influence of poverty is very low in the central part of Uyo (mostly in the Eto and Offot clans). This was mostly observed around the Ewet Housing, Osongama, Plaza, Shelter, and other housing estates. These areas are characterised by high infrastructure, good roads, steady electricity, and good housing quality (built-up areas), as shown in Fig 1. This scenario differs as one moves away from a city's heart. For instance, in Afaha Oku, Ekpri-Nsukara, EbongEssien, and Udoette, there is a high level of poverty due to low housing quality, poor environment, and an epileptic power supply. Therefore, these areas were dominated by cultivated and secondary forests. Thus, poverty is unevenly distributed, as the peak is found at the extremes of Uyo (see Fig 2).



ID	ESTATES	ID	ESTATES
1	Confidence Estate, Itu Road	7	Akwa Savings and Loans Estate, Aka Itiam Road
2	Itiam/Ewet/Eniong Estate	8	Akwa Ima Estate, Ikot Akpan Abia
3	Osongama Estate	9	Federal Housing Estate, Abak Road
4	Shelter Afrique, Mbiabong	10	Silver Jubilee Estate, Idoro Road
5	Apasak Estate, Mbiabong	11	Okedu Haven Estate, Ikot Ekpene Road
6	John Ebiye Estate, Udo Udoma Avenue	12	Mutual Alliance Estate, Aka Itiam Road

Fig. 3: Uyo L.G.A map showing Estates

Source: Department of Geography and Natural Resource Management, University of Uyo, Akwa Ibom State.

Testing of Hypothesis Two

There were no significant differences in the causes and consequences of poor residential districts in the study area. One-way Analysis of Variance (ANOVA) was used to compare the causes and consequences of poverty across all clans in Uyo. The results are presented in Tables 5 and 6, respectively. More details on the calculations are provided in the Appendix.

Table 5: Variation in the Causes of Poverty in Uyo

ANOVA					
Causes of poverty	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Between Groups	50.027	3	16.676	.780	.506
Within Groups	8469.770	396	21.388		
Total	8519.797	399			

Source: Author's Fieldwork, August 2019.

Table 6: Variation in the Consequences of Poverty in Uyo

ANOVA					
Consequences of poverty	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Between Groups	51.028	3	17.009	.796	.497
Within Groups	8462.050	396	21.369		
Total	8513.078	399			

Source: Author's Fieldwork, August 2019.

INTERPRETATION OF RESULT

Table 5 shows the significant difference in the causes of poverty across all clans in Uyo, with an F value of 0.780p = 0.506 which indicates that the observed mean difference was not statistically significant at a level of significance (H_o accepted). This indicates that there were no significant differences in the causes of the poor residential districts in the study area. Similarly, Table 6 shows the variations in the consequences of poverty in Uyo. The ANOVA table produced an F-value of 0.796 with a P-value of 0.497. With this result (P>0.05), Ho was accepted; therefore, it can be concluded that there were no significant differences in the consequences of poor residential districts in Uyo.

In summary, the two tables (Tables 5 and 6) which all accepted the null hypotheses imply that across all four clans in Uyo, there were no significant differences in the causes and consequences of poverty. The respondents' opinions show that the major cause of poverty across all clans is unemployment, followed by low per capita income, low level of education, inflation/high cost of living, rural-urban migration, and environmental degradation. Regarding the consequences of poverty, an increase in crime rate/insecurity was highlighted as the leading consequence across all the clans. This was closely followed by low socioeconomic development, poor residential area/slum development, poor hygienic patterns, high morbidity rates, poor/low esteem, inadequate manpower, and psychological distress.

This study estimated the poverty line of the Uyo local government area using the average household expenditure as a yardstick. The formula (2/3 of the average household expenditure) shows a poverty line of ₦11,768.3 per month. This is equivalent to ₦457.10 daily and ₦3213.70 weekly expenditures. With these values, it was established that the higher the value, the lower the poverty level of respondents. For instance, a respondent whose average household expenditure is ₦15,000 is regarded as being free from the scourge of poverty, compared to respondents with an average expenditure of ₦5,000. A further breakdown shows that 39 per cent of Oku clan residents live below the poverty line, while Ikono Etoi and Offot recorded poverty rates of 30 per cent, 25%, and 16%, respectively. This result clearly shows that poverty is most pronounced in Oku and Ikono, whereas Etoi and Offot are the least affected (Fig 2). The procedure for calculating the poverty line is similar to that adopted by Ofem (2010).

This study carefully scrutinises the spatial distribution pattern of urban poverty in the Uyo local government area of Akwa Ibom State. The findings clearly showed a significant difference in the spatial distribution of poor urban residents in Uyo. However, the result of the first hypothesis testing produced a calculated F-value of 330.820 with 3 and 396 degrees of freedom, and the p-value of 0.000 indicates that as far as Uyo is concerned, the mean poverty level in the four clans was not the same. Further findings show that the incidence of poverty seems to be higher than that recorded in the Etoi and Offot clans. This is further explained by the map showing the spatial distribution of poor urban residents in Uyo (Fig 2). The map also cements the findings by showing that most parts of Etoi and Offot indicate low-poverty patterns, compared to Oku and Ikono. Other parameters used to rate poor residents included education, occupation, source of income, housing conditions, household expenditure, medical facilities, source of water, access to power supply, means of transportation, and land use/land cover type, among others. For instance, clans like the Oku and Ikono clans recorded low educational levels of residents, low-income levels, and inadequate housing quality

compared to the Etoi and Offot clans. This study largely agrees with the work of Etim and Edet (2013), who asserted that households whose heads have high educational attainment and high earnings (income) have lower autonomous poverty depth.

The findings from this study also correspond with the work of Mbah and Mgbemena (2016) which focused on Urban Poverty Incidence in Nigeria: A Study of Awka Metropolis Anambra State, Nigeria. The study disclosed that "the causes of poverty in the Awka metropolis include a lack or inadequate supply of identified necessities of life, such as shelter, potable water, sanitation, basic healthcare services, electricity, and educational services. As a result of these inadequacies, there is psychological distress, increases in destitution, child labour, violent crime, and prostitution". This study also agrees with the findings of Ekpoh (2015), who asserted that rainfall adds more water to the surface runoff, leading to incessant, severe flood conditions. This deterioration in the environment accounted for the poverty development in Uyo.

This study also examines whether there are any significant differences in the causes of poverty across all clans in Uyo. The result showed an F value of 0.780 *(p* = 0.506), which indicates that there were no significant differences in the causes of poor residential districts in the study area. The results also examine the variation in the consequences of the incidence of poverty in Uyo, and the result produces an F value of 0.796 with a p-value of 0.497 which implies that there are no significant differences in the consequences of poor residential districts in Uyo. These findings emphasise that across all four clans in Uyo, there were no significant differences in the causes and consequences of poverty. For instance, unemployment was mostly seen as the number one cause of poverty in the Oku clans; residents of Ikono, Etoi, and Offot also agreed with this assertion. The major consequence of poverty was insecurity, which was anonymously accepted by a greater percentage of residents of all clans in Uyo. This study is in agreement with the work of Ofem *et al.*, (2010), who revealed that extremely poor persons were found mostly on the Afaha Oku axis of the urban area. Very poor residents lived in the Ekpanya and Iba Oku Zones. Rich residents lived in the Udo Umana, Iboko Offot, Etoi, and Aka Town areas. The rich occupy the areas of the Dominic Utuk Road axis, State Housing Estate, and Federal Housing Estate.

Poverty encompasses a variety of characteristics, including its linguistic nature and its multidimensional, complex, individual- or context-specific, and absolute or relative aspects (Gweshengwe and Hassan, 2020). In order to effectively analyze poverty, it is crucial to grasp the context-sensitive meaning of poverty (Clarke and Erreygers, 2020). The multifaceted and intricate nature of poverty necessitates the selection of an appropriate poverty worldview for analysis (Ogwumike and Ozughalu, 2015). Moreover, poverty exhibits variations based on age, gender, and context, emphasizing its individual- and context-specific features (Clarke and Erreygers, 2019; Gweshengwe, 2020).

In a nutshell, respondents' opinions show that the major cause of poverty across all clans is unemployment, followed by low per capita income, low level of education, inflation/high cost of living, rural-urban migration, and environmental degradation. Regarding the consequences of poverty, an increase in crime rate/insecurity was highlighted as the leading consequence across all the clans. This was closely followed by low socioeconomic development, poor residential area/slum development, poor hygienic patterns, high morbidity rates, poor/low esteem, inadequate manpower, and psychological distress. The study revealed that poverty is obvious in Uyo urban areas (especially in the Oku and Ikono axes) and has a strong relationship with education, household size, occupation, employment, shelter, income, and social infrastructure facilities, such as health, roads, electricity, and water. During in-depth interviews with some residents of the area, it was learned that many unemployed residents were graduates, while some were underemployed; as such, they hardly had money to improve their lives, making them live in adjunct poverty. Moreover, the inability of the government to pay attention to some retired civil servants was highlighted by some of the respondents during in-depth interviews, leaving them with no option to remain in their poor status. This has resulted in unrest (insecurity) in Uyo, as the area witness's robbery incidence daily, even in broad daylight across the entire Uyo. This findings were supported by Husmann (2016), Iheonu and Urama (2019), Ngoma and Mayimbo (2017), Watmough, Atkinson, Saikia, Hutton (2016), Sedda, *et al.*, (2015), Rogers, Emwanu, Robinson (2006) and Smith-Clarke, Mashhadi, Capra (2014).

This study, to a large extent, supports the vicious cycle of poverty theory in the sense that poor resident's cycle around areas dominated by low-income earners, low socioeconomic activities, poor housing quality, and lack of quality infrastructure and amenities, while the reverse is the case in areas that have the high infrastructure (such as estates), good roads, and high-income earners, among others (Blazevski, Petreski and Ristovska, 2017; Abdullatif, Omar, & Udin, 2017; and Rohima, Suman, Manzilati, & Ashar, 2013).

For instance, in the Oku clan, as many residents are low-income earners, they cannot afford many necessities of life and are therefore unable to break the vicious cycle of poverty. By contrast, in the Etoi and Offot clans, individuals with a high income can save, invest, and retain the same status. Hence, the cycle of

poverty revolves around major parts of the Oku and Ikono clans.

However, the findings from this study, in some cases, agree with the multiple nuclei theory (Manhart, Windner, Baylies, Mogilner, 2018; Abou-Khousa, & Mustapha, 2022; Kisiała & Rącka, 2021) For instance, taking Ibom Plaza as a central business district (CBD), the land-use pattern is built-up (Fig 1) which denotes a high level of socioeconomic activities which, according to this theory, represents point 1. The theory further claimed that city growth from the central core is complicated by the existence of several subsidiary centres, each of which acts as a growth pole to develop which Ewet housing, Osongama, and Shelter Afrique, may be regarded as such. These nuclei have created the overall cellular urban structure of Uyo. In other words, Uyo's structural pattern does not support this theory completely. For instance, this theory sees the central point as being highly developed before it spreads to other parts, but Uyo as a city does not completely support this assertion. For instance, less than 500 metres from the Ibom Plaza (which may be regarded as CBD) exists on Udi, Eka, Oku, Ibiam, Udo, Nsentip, and Udo Eduok Streets. These streets are dominated by poor-quality buildings (ghetto and slum), which are mostly low-income earners and highly unemployed residents. However, places such as Ewet, Osongama, Shelter, EbidoHaven, and Silver Jubilee, all located not less than 5 km from the CBD, have witnessed high infrastructural development, dominated by high-income earners, steady electricity, and so on. This, therefore, criticises the multiple nuclei theory.

Plate 1: Infrastructural decay at Ibom Plaza
Source: Author's Fieldwork, August 2019.

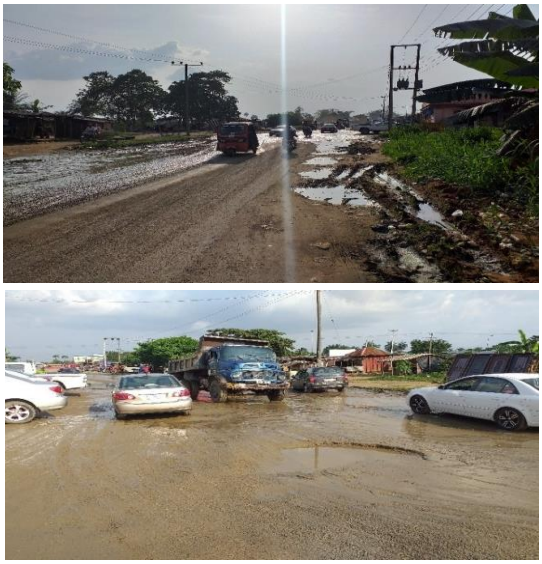


Plate 2: Poor Road Network at Pepsi Junction, Idoro Road (Ikono Clan)
Source: Author's Fieldwork, August 2019.

Plate 3: Flood Prone Area along IBB Avenue (Offot Clan)
Source: Author's Fieldwork, August 2019.

Plate 4: Flood incidence in the residential district along Udoette and Ikpa Road (Oku Clan)
Source: Author's Fieldwork, August 2019.

Plate 5: Poor residential district (Slum settlement) along Eka Street (Oku Clan)
Source: Author's Fieldwork, August 2019.

Plate 6: Poor waste disposal pattern along Oku Clan
Source: Author's Fieldwork, August 2019.

Plate 7: High infrastructural development in Osongama Estate (Etoi Clan)
Source: Author's Fieldwork, August 2019.

CONCLUSION

Poverty is one of the most serious manifestations of human deprivation and is inextricably linked to human capital development; thus, it is an issue of global concern, as it encompasses inadequate income and denial of necessities, such as education, health services, clean water, and sanitation. It is characterised by a lack of purchasing power, exposure to risk, malnutrition, high mortality rate, low life expectancy, insufficient access to social and economic services, and few opportunities for income generation. Factors responsible for high poverty levels include low per capita income; overpopulation, especially of the active group; unemployment; inflation; high cost of living; and the low level of education of some urban dwellers, the inner urban decay caused by poor maintenance of, and lack of investment in public facilities (such as non-functioning of public kiosks, lack of maintenance/repairs of transformers, bad roads), among others. Currently, the struggle to lift more citizens out of extreme poverty is an indicator of successive Nigerian governments which have mismanaged the country's vast oil riches through incompetence and corruption.

Since poverty manifests in widely varying spheres of life, policies for reducing it should encompass all of its main determinants at the same time. Thus, comprehensive strategies must be employed to eliminate the structural vacuums associated with poverty, while simultaneously addressing the immediate needs of the poor population in areas such as employment, education, income, health, and housing. Therefore, poverty in Uyo requires urgent attention. Since more than 70 per cent of the respondents saw unemployment as the number one determinant of poverty in the area (percentage captured through in-depth interviews with the respondents), economic growth and stability are necessary conditions for poverty reduction, especially when they translate into more and better jobs for the poor. A larger number of satisfactory employment opportunities is a prerequisite for the success of poor households' efforts to attain financial self-reliance.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made.

1. Since urban poverty encompasses it, tackling it should be a joint effort by all stakeholders (government agencies, non-governmental organisations, charity groups, private individuals, and so on) in national development through the stakeholders' collaborative framework. This should involve priority policy formulation, public financing, social responsibility, and implementation and monitoring processes.
2. To alleviate poverty in Nigeria, an experimental approach (process approaches, such as training

and retraining of citizens to be self-reliant) should be adopted in the design and implementation of poverty alleviation programs from the learning process through the gradual build-up of programs to integrate poverty alleviation programs with national development programs to ensure the sustainability of such programs and policies for the poor.

3. The social services and social welfare needs of the urban population are not well addressed. These factors should be adequately considered in the design of urban poverty alleviation programs. This should be done by governments, NGOs, entrepreneurs, and companies.
4. There is a need to improve the enhancement of human capital through training in life skills and vocations which would help stimulate the innate entrepreneurial potential of people, expand their income-generating capacities, and become more productive. This is due to the complaints of most residents of the study area regarding their inability to train themselves and their children due to financial constraints.
5. Efforts by unrealised governmental NGOs in the areas of infrastructural development (provision of electricity supply, access to clean drinking water, health centres, and affordable housing) would go a long way to improve the living conditions of the people in the study area.

AUTHOR CONTRIBUTIONS

Enyenihi and Edwin Magnus performed a literature review and data collection under the guidance of Dr Bassey John Bassey. Dr. Bassey designed the study, analysed and interpreted the data, and prepared and edited the manuscript.

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CONFLICT OF INTEREST

The authors declare no potential conflicts of interest regarding the publication of this paper. In addition, ethical issues, including plagiarism, informed consent, misconduct, data fabrication, falsification, double publication, submission, and redundancy, have been completely addressed by the authors.

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