

# Spatial Disparity in Social Infrastructural Provision in Etim Ekpo, Akwa Ibom State, Nigeria

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### ABSTRACT

This study investigated the spatial disparity in social infrastructure provision in Etim Ekpo, Akwa Ibom State, Nigeria. Data for the study were obtained from the Akwa Ibom State Statistical Year Book complemented by reconnaissance survey of the sampled settlements' in order to update the available infrastructure with the information obtained through secondary sources. Through a systematic random sampling, 30 communities were selected from all the 84 communities that made up the study area while the weighted scores derived from Z-score variate and location quotient (L.Q) was employed in determining the spatial disparity in social infrastructure provision in the sampled communities'. It is revealed from the analysis that many communities in the study area are very disadvantaged in terms of infrastructural adequacy as the existence of large scale disparities in social infrastructure provision abound among the rural communities. The need for the government to redirect her spending through improved budgetary allocation for the provision of social infrastructure in the rural communities of the State is suggested as these facilities have been found to influence productivity of the rural dwellers and reduce the high wave of rural-urban migration evidenced in the state with its attendants consequences in the receiving area.

Key Words: Infrastructure Provision, Spatial Disparity, Location Quotient and Rural Communities

## INTRODUCTION

Human life and development is based on the extent to which man can satisfy his basic needs such as food, clothing and shelter. In order to fulfill these and other needs, man requires access to certain services such as market, housing, water supply, electricity, play-ground, and adequate transportation (Adekunle et al, 2011). This is because social infrastructure services are central to the activities of households and to economic production (United Nations, 2015; Davern et.al, 2017; Abraha, 2019; and Dejen et al., 2019). This truth becomes excruciatingly apparent when natural disaster or civil disturbances destroy roads, culverts, bridges, electricity lines, water mains etc. In such situations, communities' quality of life and productivity becomes radically reduced. This perspective underscores the significance of adequate provision of social infrastructure services in enhancing welfare and economic growth. This informed the observation by Hasssan and Nor (2017) that accessibility to social infrastructure by the poor is paramount in poverty elimination or reduction. Corroborating this assertion, Avinash (2017), Lusting (2005), UN (2001), Parkin and Sharma (1999) and World (Bank 1994) noted that adequacy of social infrastructure helps determine one country's success and another's failure in diversifying production, expanding trade, coping with population growth, reducing poverty, improving standards of living and environmental conditions.



The development of social infrastructure in Africa as observed by United Nations (2015) was driven by her economic specialization as a resource base during the colonial era. The availability of natural resources led to the development of transportation and intensified Foreign Direct Investment (FDI). The major policy thrust of infrastructural development during the colonial era was exclusively to promote communication with the western powers which was affirmed by Salisu (2016) that firms use infrastructure as delicate intermediate goods as means to an end while household utilized infrastructure as final consumables.

Access to social facilities like electricity, drinking water, toilet facility, sanitation and health care facilities are critical determinants of quality of life (Bhagat, 2010). Thus, social infrastructures are necessary for a society to function. Healthcare cannot be accessed by people if there are no hospitals, trade cannot take place if there are no good roads to transport goods to market. In other words, social infrastructure facilitates the basic functions of a society that are necessary to transport resources, people and produce as well as trade goods, and provide essential services which ultimately reduce poverty.

Nigeria, like other developing country, is linked to the antecedents of development traced to the colonial era (Oguzor, 2011). Nigeria's colonial and neo-colonial historical experiences which culminated in the rural-urban inequality in terms of the distribution of socio-economic amenities have led to a situation where the majority of the rural population are trapped and sub-merged in a sub-human culture of silence, misery and isolation (Onimode, 1988). Several parts of rural Nigeria are known for defective access feeder roads, total absence of power supply and epileptic power supply where available and inadequate or complete lack of basic health facility among others (Esin, 2017). In Nigeria, oil is the major economic resource that defines the growth of other sectors of the economy. At the Federal level, revenue from the oil is shared among the three tiers of Government based on the derivation sharing formula as entrenched in the constitution. At the state level, distribution of the shares is at the preference of the state Governors. Social amenities provision is funded by the three tiers of government.

Disparities exist in the distribution of social infrastructure such that the vast majority of the people in the rural areas become victims of an unending struggle to gain access to social services in order to improve their quality of life (UN, 2015; Adefila and Bulus, 2014). While the absence of social infrastructure is one of the key factors that hinder households from improving their livelihoods, unequal access to these facilities can also compel the inclusiveness of growth. The spatial variation in availability of social infrastructure in rural areas results in spatial disparities in living standards both within and between communities and localities.

The provision of social amenities in Nigeria over the years has shown evidence of bias in public investment for infrastructure. Social amenities tend to be crowded in urban centers at the detriment of the rural communities where majority of the population is poor. Besides the location of facilities in the country has assumed political undertones, resulting in some areas being more favored in the number and size of facilities over other areas. As a result, the rural population has extremely limited access to services such as schools and health centers, and about half of the population lack access to safe drinking water. Neglect of social infrastructures' affects the profitability of agricultural production. The lack of rural roads impedes the marketing of agricultural products which are mainly produced in the rural communities; prevent farmers from selling their products at reasonable prices and leads to spoilage.

Consequently, spatial disparities in the distribution of social infrastructures have present significant economic and political challenges for the government of Nigeria. While systematic evidence on the extent of spatial disparity in social amenities provision in developing countries is relatively scarce (Kim, 2008), a growing body of work has documented the existence of spatial disparity in infrastructure provision in many forms in various countries in Asia, Europe and Latin America (Tao et al., 2018; Shanmathi et al., (2017). Few studies have been conducted in Nigeria on spatial distribution of social amenities at the Local government level, not much has been done at the rural level of Akwa Ibom State, particularly in the present study area. This study is conducted to fill this gap of knowledge as it analyzes the spatial disparity in social infrastructure provision in Etim Ekpo Local Government Area, so as to provide empirical data on the existing social facilities which would serve as a reliable tool for policy formation with emphasize on the need to provide social facilities to deprived and underserved rural households in the State.



## **CONCEPTUAL ISSUES/ LITERATURE REVIEW**

Several scholars (Adefila and Bulus, 2014; Ngeleza et al. 2011; Grant 2010; and Somik and Sanjoy, 2005) have used different concepts to explain spatial inequalities; some are based on geography while others are based on social, economic or political features or a combination of variables from two or more features aforementioned. In a general sense, measuring spatial inequality entails examining the quality of infrastructure existing in a place with a view of identifying the level of spatial equity and determining the underserved communities in that place (Adefila and Bulus, 2014). Spatial inequality exists in all levels of settlements, in neighbourhoods, districts, towns, cities, metropolis and country levels (Somik and Sanjoy, 2005).

Grant (2010) attributed matters of spatial inequalities to poverty rather than access to infrastructure and services. Adefila and Bulus (2014) confirmed that the core and the peripheral areas exhibit inequalities in varying degrees which only the state and national politics could address. Oyedele (2012) opined that existing infrastructure in a community represents the performance of government and also serves as criteria for measuring good governance

Adefila and Bulus (2014) employed total factor productivity, Z score, regression analysis (Least cost, linear regression etc.) and location quotient (LQ) models for measuring spatial inequalities in space.

## MATERIALS AND METHODS

#### **Location of Study Area**

Etim Ekpo Local Government Area is located between latitude  $4^{0}55^{1}$ N of the Equator, and longitude  $7^{0}35^{1}_{E}$  and  $7^{0}40^{1}$  East of Prime Meridian. It is situated in the Northeastern part of the southern Nigeria. Etim Ekpo Local Government Area occupies a total land area of 305.5 square kilometers and is located about 50 kilometers from Uyo, the capital of Akwa Ibom State. The area is bounded on the south by Ukanafun Local Government Area, on the North by Essien Udim Local Government Area, on the West by Abia State and Ika Local Government Area, and on the East by Abak Local Government Area.



Fig 1: Akwa Ibom State Showing Etim Ekpo LGA



The geo-political entity known as Etim Ekpo Local Government Area has undergone series of political metamorphoses. During the divisional administration system of Government in the defunct Eastern Region, the area was known as Northern Annang council. It later assumed the status of a touring area in the era of the development administration of erstwhile South Eastern State. Etim Ekpo enjoyed a brief period of political autonomy as a local government Area when the then Cross River State under the then leadership of Dr. Clement Isong created additional local government areas in 1981. But with the abolition of all the local administrative structures of the second Republic civilian government by the military Government of Major General Muhammadu Buhari in December 1983, Etm Ekpo became part of to Abak Local Government Area from where it was carved out.

On September 23, 1991, the General Babangida administration created Etim Ekpo Local Government Area with Headquarters at Utu Etim Ekpo. The Local Government Area is made up of five (5) clans, comprising: Obong (26 Villages), Utu (15 Villages), Kono (18 Villages), Uruk (18 Villages), Utit Annang (7 Villages). Thus, Etim Ekpo LGA has a total of 84 villages. The people of Etim Ekpo Local Government Area are Annang speaking with homogenous culture and tradition. According to the 2006 National population census outcome, Etim Ekpo Local Government Area had a total population of 105,418 people of which males were 55, 771 and females 49,6477 (NPC, 2006). This population has increase to proposed figure of 142,429 persons in 2015. This growth in population affects the provision of social amenities in the study area.

The main occupation of the people is farming. Food crops such as cassava, maize, yam, sweet yam, vegetables, melon and pepper are produces in commercial quantity. The principal cash crops are palm produce and coconut. Apart from farming, the people are also engaged in blacksmithing, iron mongering, trading, local craft, manufacturing, weaving, wood carving, mat making, industrial/agricultural tools fabrication and local gin brewing.

#### **Data Sources**

Data for the study were obtained from secondary sources such as the Akwa Ibom State Statistical Year Book, the National Population Commission and published dissertations. Field survey of the sampled communities was undertaken in order to update the information obtained from the secondary sources where the need arises. The social infrastructure variables used in the study are outlined in Table 1:

| S/N | Variable                               | Unit of Measurements        |
|-----|--|-----------------------------|
| 1   | Number of nursery/Primary Schools      | Numeric/ Standardized score |
| 2   | Number of Secondary of Schools         | Numeric/ Standardized score |
| 3   | Number of Primary Health centers       | Numeric/ Standardized score |
| 4   | Number of Comprehensive Health centers | Numeric/ Standardized Score |
| 5   | Number of General Hospitals            | Numeric/ Standardized Score |
| 6   | Number of Markets                      | Numeric/ Standardized Score |
| 7   | Number of Motor Parks                  | Numeric/ Standardized Score |
| 8   | Number of Boreholes                    | Numeric/ Standardized Score |
| 9   | Number of Telecommunication Masts      | Numeric/ Standardized Score |
| 10  | Number of Play grounds                 | Numeric/ Standardized Score |

Table 1: Social Infrastructure Variables

#### Sampling and Sample Size of Selected Villages

The map of the study area containing the number of existing settlements that make up Etim Ekpo LGA was obtained from the GIS department at the Local Government Area Headquarters. From the list of all the 84 villages on the map, a total of thirty (30) villages were systematically selected for the study.



### Method of Data Analysis

Weighted scores data obtained from Z-scores variate and Location quotient models were employed in the data analysis. The location quotient is a device for comparing a settlement's percentage share of a particular facility with its percentage share of its population (Parry, Kuchay, Ganaire and Bhat, 2013). For calculating the location quotient (L.Q.) for a particular facility 'I' in a particular settlement, the following formula has been used.

L.Q = (ni/p)

(Ni/P)

Where ni = Number of social amenity 'i' in a given settlement

p = Population of the concerned settlement,

N = Number of amenity 'i' in Etim Ekpo

P = Total population of Etim Ekpo

If L.Q > 1, concentration is indicated, showing that the per capital availability of that facility/ amenity in the settlement exceeds that of the entire study area as a whole.

L.Q. < 1 indicates deficiency and LQ = 1 indicates self-sufficiency.

In order to have an idea about the degree of spatial disparity with respect to various social infrastructure, a special type of cumulative frequency graph, known as Lorenz curve commonly used for measuring inequality in income, was employed. The Lorenz curve shows the actual quantitative relationship between the percentage of income recipients and the percentage of total income they receive. In the present study, percentage of population belonging to a group of settlements instead of income recipients has been taken in order to gauge the magnitude of inequality in the provision of different amenities. The line of equality shows the equal distribution of the facilities. The deviation of Lorenz curve depicts the degree of spatial disparity. If the curve is close to the line of equality, it indicates least disparity and the more it deviates from it, the more is the disparity.

Weighted scores were employed to identify gaps in the provision of social infrastructure in the study area, which involved the assigning of values to different facilities as based on their number. The total number of the infrastructure in each settlement was multiplied by the number obtained by dividing the aggregate number of all types of social infrastructure by total number of each of the social amenity. The individual weighted scores of different infrastructure of a settlement were added together to get total weighted score of each settlement. In order to determine the place or position of each settlement in terms of the facilities provided to it, weighted score was obtained by multiplying the existing number of different infrastructure in each settlement and the corresponding weightage of each infrastructure present in it. The weighted scores is mathematically expressed as:

Composite score of a settlement =  $(W_{1xN}1 + W_2 + N_2 + W_3 \times N3 - - - + Wn \times N_n)$ 

Where:

 $W_{1to n} = Weightage of variables,$ 

 $N_{1 \text{ to } n} =$ Number of Amenities

The aggregate weighted scores have been projected on map to highlight the underserved settlements which need special consideration for ensuring equitable distribution of basic infrastructure in the study area.



## **RESULTS AND DISCUSSIONS**

Table 2: Distribution of Social Infrastructure in Etim Ekpo

| S/N | VILLAGES               | N/PS     | SS | РНС | MTY | DISP. | CHC | GH | PA | GSM | CB | MP | MKT | PG | BH | TOTAL |
|-----|------------------------|----------|----|-----|-----|-------|-----|----|----|-----|----|----|-----|----|----|-------|
| 1   | Atai Nto Obo           | 2        | 1  | 1   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 0   | 0  | 10 | 14    |
| 2   | Ikot Akpan             | 0        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 0   | 0  | 2  | 2     |
| 3   | Abak Town              | 1        | 1  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 2   | 0  | 6  | 10    |
| 4   | Utu Nsekhe             | Nsekhe 1 |    | 2   | 0   | 0     | 0   | 0  | 0  | 1   | 0  | 0  | 1   | 1  | 12 | 18    |
| 5   | Uruk Ata Ikot<br>Akpan | 0        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 0  | 6  | 7     |
| 6   | Nkwot Ikono            | 1        | 1  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 0  | 24 | 27    |
| 7   | Uruk Ata Ikot<br>Akpan | 1        | 0  | 0   | 0   | 0     | 1   | 1  | 0  | 0   | 0  | 0  | 0   | 0  | 7  | 10    |
| 8   | Abak Obong             | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 0  | 2  | 4     |
| 9   | Ikpe Annang            | 2        | 0  | 1   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 2   | 0  | 16 | 21    |
| 10  | Otoro Obong            | 0        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 0  | 6  | 7     |
| 11  | Ikot Awak              | 0        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 0   | 0  | 1  | 1     |
| 12  | Ikot Inung             | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 1   | 0  | 0  | 0   | 0  | 4  | 6     |
| 13  | Ikot Obioma            | 0        | 1  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 0  | 5  | 7     |
| 14  | Utit Idm<br>Mkporukpo  | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 0  | 5  | 7     |
| 15  | Nsa Obong              | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 2   | 0  | 10 | 13    |
| 16  | Nto Edet               | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 1  | 10 | 13    |
| 17  | Utu Ikot<br>Imoute     | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 1  | 0   | 0  | 7  | 9     |
| 18  | Utu Ikot<br>Eboro      | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 0  | 4  | 6     |
| 19  | Ikot Uma<br>Ebak       | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 0   | 0  | 10 | 11    |
| 20  | Ikot Nkim              | 0        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 0   | 0  | 3  | 3     |
| 21  | Ibio Edem<br>Urua      | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 1   | 0  | 0  | 0   | 0  | 12 | 14    |
| 22  | Ikot Oduongo           | 1        | 0  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 1  | 4  | 7     |
| 23  | Ikot Ese               | 1        | 1  | 0   | 0   | 0     | 0   | 0  | 0  | 0   | 0  | 0  | 1   | 1  | 13 | 17    |

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| 24 | Ikpe Atai           | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1  | 0 | 10  | 13  |
|----|---------------------|----|---|---|---|---|---|---|---|---|---|---|----|---|-----|-----|
| 25 | Ikot Edet           | 2  | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1 | 15  | 22  |
| 26 | Nto Unang           | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1  | 1 | 15  | 20  |
| 27 | Nung Oku<br>Ikot    | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1 | 6   | 8   |
| 28 | Ikot Inyang         | 1  | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1  | 0 | 13  | 17  |
| 29 | Obot Itit Idim      | 1  | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1 | 3   | 6   |
| 30 | Obong Ikot<br>Akpan | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 5   | 7   |
|    | Total               | 26 | 7 | 6 | 0 | 1 | 2 | 1 | 0 | 6 | 0 | 2 | 22 | 8 | 247 | 328 |

#### Source: Fieldwork (2022)

**Key:** N/PS= Nursery/Primary School, SS= Secondary School, PHC= Primary Health Center, MTY= Maternity Centre, DISP.= Dispensary, CHC=Comprehensive Health Centre, GH= General Hospital, PA= Postal Agency, GSM= Global System for Mobile Communication, CB= Community Bank or Commercial Bank, MP= Motor Park, MKT= Market, PG = Play Ground, BH= Borehole.

Table 2 shows mark spatial disparity in available social infrastructure provision as observed across Etim Ekpo Local Government Area. For instance, only one settlement (Nkwot Ikono) accounts for the largest concentration of all the social infrastructures under study while seven (7) settlements (Ikot Edet, Ikpe Annang, Nto Unang, Utu Nsekhe, Ikot Inyang and Ikot Ese, Ibio Edem Urua) have the presence of fifteen (15) of the social infrastructures under examination, with only two (2) settlements (Ikpe Ata and Esa Obong) having 13 of the investigated infrastructures. In terms of social infrastructure stocks, two (2) settlements (Ikot Nkim and Abak Obong) have four social infrastructure stocks respectively with only Ikot Awak having the least number of social amenities ( only the presence of only one borehole in the area).

| S/N | VILLAGES               |      |    |     |       |     |    |     |    |     |    |    | te                         |
|-----|------------------------|------|----|-----|-------|-----|----|-----|----|-----|----|----|----------------------------|
|     |                        | S4/N | SS | PHC | DISP. | CHC | GН | GSM | MP | MKT | PG | BH | Composi<br>Weight<br>Score |
| 1   | Atai Nto Obo           | 2    | 1  | 1   | 0     | 0   | 0  | 0   | 0  | 0   | 0  | 10 | 139.35                     |
| 2   | Ikot Akpan             | 0    | 0  | 0   | 0     | 0   | 0  | 0   | 0  | 0   | 0  | 2  | 2.66                       |
| 3   | Abak Town              | 1    | 1  | 0   | 0     | 0   | 0  | 0   | 0  | 2   | 0  | 6  | 96.90                      |
| 4   | Utu Nsekhe             | 1    | 0  | 2   | 0     | 0   | 0  | 1   | 0  | 1   | 1  | 12 | 248.13                     |
| 5   | Uruk Ata Ikot<br>Akpan | 0    | 0  | 0   | 0     | 0   | 0  | 0   | 0  | 1   | 0  | 6  | 22.88                      |
| 6   | Nkwot Ikono            | 1    | 1  | 0   | 0     | 0   | 0  | 0   | 0  | 1   | 0  | 24 | 105.94                     |
| 7   | Uruk Ata Ikot<br>Akpan | 1    | 0  | 0   | 0     | 1   | 1  | 0   | 0  | 0   | 0  | 7  | 513.57                     |

Table 3: Composite/Aggregate Weighted Score of selected Social Amenities Provision in Etim Ekpo L.G.A.



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| 8  | Abak Obong            | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 2   | 29.82  |
|----|-----------------------|----|---|---|---|---|---|---|---|----|---|-----|--------|
| 9  | Ikpe Annang           | 2  | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2  | 0 | 16  | 130.27 |
| 10 | Otoro Obong           | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 6   | 22.8   |
| 11 | Ikot Awak             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0 | 1   | 1.33   |
| 12 | Ikot Inung            | 1  | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0  | 0 | 4   | 72.25  |
| 13 | Ikot Obioma           | 0  | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 5   | 68.41  |
| 14 | Utit Idm<br>Mkporukpo | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 5   | 33.81  |
| 15 | Nsa Obong             | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2  | 0 | 10  | 55.36  |
| 16 | Nto Edet              | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1 | 10  | 81.46  |
| 17 | Utu Ikot Imoute       | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0  | 0 | 7   | 185.57 |
| 18 | Utu Ikot Eboro        | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 4   | 32.48  |
| 19 | Ikot Uma Ebak         | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0 | 10  | 25.56  |
| 20 | Ikot Nkim             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0 | 3   | 3.99   |
| 21 | Ibio Edem Urua        | 1  | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0  | 0 | 12  | 84.22  |
| 22 | Ikot Oduongo          | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1 | 4   | 73.48  |
| 23 | Ikot Ese              | 1  | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1 | 13  | 132.31 |
| 24 | Ikpe Atai             | 1  | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1  | 0 | 10  | 95.13  |
| 25 | Ikot Edet             | 2  | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0  | 1 | 15  | 569.67 |
| 26 | Nto Unang             | 1  | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1  | 1 | 15  | 306.78 |
| 27 | Nung Oku Ikot         | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1 | 6   | 63.88  |
| 28 | Ikot Inyang           | 1  | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1  | 0 | 13  | 263.12 |
| 29 | Obot Itit Idim        | 1  | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1 | 3   | 104.11 |
| 30 | Obong Ikot Akpan      | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 5   | 33.81  |
|    | Total                 | 26 | 7 | 6 | 1 | 2 | 1 | 6 | 2 | 22 | 8 | 247 |        |

Source: Field Work (2022)

**Key:** N/PS = Nursery/Primary School; SS = Secondary School; PHC; = Primary Health Center; DISP.= Dispensary; CHC= Comprehensive Health Centre; GH= General Hospital; GSM= Global System for Mobile Communication; MP= Motor Park; MKT= Market; PG = Play Ground; BH= Borehole.



Table 2 is employed in settlement-wise analysis of the selected social infrastructure distribution in Etim Ekpo. It is evident in Table 2 that six settlements (20%) do not have any educational institutions out of the thirty sampled settlements, while eight settlements (27%) are deficient in the establishment of educational institutions. Sixteen settlements (53%) possess above normal concentration (highly advantaged), that is, the per capita availability of the facility exceeds that of the study area as a whole. Settlement wise, Ikot Umoebat tops the hierarchy as having the location quotient value of 3.16 for educational facility.

In the case of health facilities, while twenty settlements (80%) out of the thirty sampled settlements do not have any health facility, one settlement (3%) is deficient in health facility provision with five settlements (17%) having above normal concentration, that is, the per capita availability exceeds that of the study area as a whole. Settlement wise, Utu Nsekhe tops the hierarchy as having a location quotient value of 6.11 for health facility, followed by Uruk Ata Ikot Isemin having a value of 4.63.

In the same vein, the location quotient analysis of boreholes in the study area indicates that sixteen settlements (53%) out of thirty are deficient in the provision of boreholes while fourteen settlements (47%) have above normal concentration, that is, the per capita availability of the facility exceeds that of the study area as a whole. Settlement-wise, Ikot Umoebat tops the hierarchy as having a location quotient value of 4.22 for borehole water provision.

Eleven settlements (37%) out of the sampled thirty settlements are lacking in the availability of any market while two settlements (7%) are underprovided in market provision. However, seventeen settlements (57%) have above normal concentration, that is, the per capita availability of the facility exceeds, that of the study area as a whole. Settlement-wise, Otoro Obong tops the hierarchy with a location quotient value of 4.58 for market provision. In the case of play-grounds, twenty two settlements (73%) out of thirty do not have any play grounds while two settlements (7%) are deficient in the provision of this facility. Six settlements (20%) have above normal concentration, that is, the per capita availability of the facility exceeds that of the study area as a whole.

#### Spatial Disparity in Social Infrastructure Provision

From the location quotient analysis, insights have been gained about the relative positions of the different settlements under study with respect to a given social infrastructure provision in Etim Ekpo Local Government Area. Such insights are indeed apropos in understanding the extent of the spatial disparity of social facilities provision in the study area. The analysis reveals that the level of concentration of social facilities provision in Etim Ekpo varies across the settlements under investigation. This enables us to deduce that considerable disparity exists among the settlements in terms of different social amenities provision. In order to gain some knowledge on the degree of spatial disparity with respect to the different social amenities, the Lorenz curve is employed. The Lorenz curve for some of the selected social amenities in the study areas are presented below.



Figure 1: Lorenz Curve for Education Facility

Source: Data Analysis 2022



It is clear from Figure 1 that there is least disparity in the provision of education institutions in the study area. Majority of the study population have about 51% shares of the education facilities while the remaining population enjoys 49% of the facility.

Fig. 2: Lorenz Curve for Health Facility



(Source: Data Analysis 2022)

Figure 3: Lorenz Curve for Borehole Provision



(Source: Data Analysis 2022)

It can be deduced from Figure 2 that disparity exists in the provision of health facility in the study area. 63% of the population of Etim Ekpo Local Government have only 28% share of health institutions, while the remaining 37% of the population enjoy 72% of health facility in the study area. This suggests that health care facility provision in the study area is grossly inadequate to meet the needs of the teeming population.

Figure 3 shows that there is acute disparity in the provision of boreholes in Etim Ekpo Local Government Area. While 5% of the population in the study area have 55percent share of borehole facilities the remaining 50% population enjoy the remaining 45% of borehole facilities in the study area. This implies that majority of the population in the sampled study area are underserved by boreholes water provision. This further reveals the extent of deprivation faced by majority of the population in the study area in accessing quality water for their daily needs.



#### Figure 4: Lorenz Curve for market facilities



(Source: Data Analysis 2022)

As deduced from Figure 4, the level of disparity in the provision of markets is relatively low. 20% of the population have 10% percent share of markets in the study area while the remaining 90% share of markets are enjoyed by 80% of the study area's population.



Figure 5: Lorenz curve for playground

(Source: Data Analysis 2022)

It is outstandingly clear from figure 5 that much disparity exists in the provision of playground among different settlements in Etim Ekpo Local Government area as 51% of the study population has access to only 25% of play-ground. This is an eye-opener to the wide disparity or inequality in the provision of this facility.



### **Identification of Gaps**

In order to identify gaps in the provision of social infrastructure in Etim Ekpo Local Government Area, a weighted index score has been worked out. The weighted index score has been given as per their number (Parry, Ganaie, Nenyroo and that, 2012) as shown in Table 3.

Table 3 Weightage of each Unit of Different Amenities

| Number of Amenities |    |     |      |     |    |     |    |     | Summ<br>Ame | nation<br>enities | of<br>S | Weighted Scores |      |       |       |       |       |        |       |       |      |
|---------------------|----|-----|------|-----|----|-----|----|-----|-------------|-------------------|---------|-----------------|------|-------|-------|-------|-------|--------|-------|-------|------|
| NPS                 | SS | PHC | DICP | CHC | GH | GSM | MP | MKT | PG          | BH                | W1      | W2              | W3   | W4    | W5    | W6    | Μ     | W8     | 6M    | W10   | W11  |
|                     |    |     |      |     |    |     |    |     |             |                   | NPS     | SS              | PHC  | DISC  | СНС   | GH    | GSH   | MP     | MKT   | PG    | BH   |
| 26                  | 7  | 6   | 1    | 2   | 1  | 6   | 2  | 22  | 8           | 247               | 1263    | 4686            | 5467 | 32800 | 16400 | 32800 | 54.67 | 154.00 | 14.91 | 41.00 | 1.33 |

Source: Data Analysis, 2022

The composite weighted scores from Table 3 have been projected on the study area map to obtain a prioritization map (Fig 6) which highlights the settlement with acute shortage of the amenities under study.





It is clear from Figure 6 that the first priority index indicates the acute shortage of some settlements in terms of social amenities provision which need special consideration in planning than the settlement which fall in the last priority index. Settlements with acute shortage in the provision of social amenities in decreasing order are Obong Ikot Akpan, Utit Idim Mkporikpo, Utu Ikot Eboro, Abak Obong, Ikot Umoebat, Uruk Ata Ikot Akpan, Otoro Obong, Ikot Nkim, Ikot Akpan and Ikot Awak. In other words, a total of ten settlements in the study area have



very low level of social infrastructure provision. The second priority index identifies eleven settlements with low level of social amenities provision in Etim Ekpo Local Government Area. These settlements in their decreasing order are Nkwot Ikono, Obong Utit Idim, Abat town, Ikpe Atai, Ibio Edem Urua, Nto Edet, Ikot Oduongo, Ikot Urung, Ikot Obioma, Nung Oku Ikot and Esa Obong. Out of the thirty settlements, four fall within the third priority index which indicates settlements with moderate level of social amenities provision. They are Utu Ikot Imonte, Atai Nto Obo, Ikot Ese and Ikpe Annang. Furthermore, three settlements comprising Nto Unang, Utu Nsekhe and Ikot Inyang fall within the fourth priority index indicating a high level of social amenities provision, while only two settlements comprising Ikot Edet and Uruk Ata Ikot Isemin fall within the last priority index indicating very high concentration of social facilities.

## CONCLUSION AND RECOMMENDATIONS

This study has examined the disparities in social infrastructure provision in Etim Ekpo LGA, Akwa Ibom State, Nigeria. It is revealed from the analysis that many communities in the study area are very disadvantaged (underserved) in terms of infrastructural adequacy. The existence of large scale disparities in social infrastructure provision abound among the rural communities in the study area. Inequality in access to basic social infrastructure in rural communities has serious implications for rural development and regional integration. The need for the government to redirect her spending through improved budgetary allocation for the provision of social is suggested as these facilities have been found to influence productivity of the rural dwellers and reduce propensity for rural-urban migration with its attendant's consequences in the receiving area.

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