

REGIONAL PLANNING AND URBAN INFRASTRUCTURE DEVELOPMENT IN THE GONGOLA REGION, NORTH EASTERN NIGERIA (1)

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ABSTRACT

In North-eastern Nigeria, the Gongola region has been one of the least developed since independence. The series of geopolitical reorganizations since 1967 which lead to the gradual and consistent decentralization of the processes of social, economic and political transformation and the reduction of spatial inequalities in development within the country appeared to have little impact on urban development in the region. The concern of this paper is to determine the pattern of urban development achieved in the region as a single administrative entity, to explore the specific and theoretical factors that were responsible for the existing pattern of urban development, and make suggestions on how to guide future planning to influence pattern of urbanization in the region, in the desired manner. To achieve these objectives, data were collected on eleven indicators of development in all the local government areas of the region and subjected to principal factor analysis, to most important form or spatial structure of regional development. The result generated five-dimensions of regional development. The most important dimension identified i.e., *urban infrastructure development*, was subjected to spatial autocorrelation analysis (using the join-count statistics), in order to determine the likelihood of existence of any spatial association in the observed pattern. The result indicates that the pattern of *urban infrastructure development* appear to be associated with some deliberate and systematic process of public policy making that promoted urban development at the early stages of the region's political development. The result also shows that the general pattern of economic development in the region has tended to favour locations surrounding the more urbanized areas thereby introducing spatial inequalities and neglect of the more rural places. The paper suggests strengthening of a system of geopolitical growth centers in the more rural areas and the adoption of a grass root approach to Development Planning in the region as a panacea for redressing spatial inequalities in the regional development process.

KEY WORDS: Region, Development, Planning, Urban, Gongola.

INTRODUCTION

One of the concerns of every community, State or nation is to move itself to higher levels of social and economic development such that all its citizens in all locations have equal access to the benefits of economic growth and development. Periodic development planning has been the most useful instrument for articulating public policies and strategies for development. In former Gongola State, comprising the present Adamawa and Taraba States, various attempts were made by government to improve the living conditions of its citizens in all places, yet the avowed objectives of bringing about spatially balanced development in the region has remained elusive.

The area called Gongola region was largely an integral part of the former North-Eastern State of Nigeria between 1967 and 1976. Gongola region became an autonomous geo-political entity in 1976 following the spatio-political reorganization of the country's geo-political structure by the Nigeria Military Government. The aim was to enhance the country's political stability and to stimulate economic development. Before this period however, the area was primarily rural, economically backward and neglected by public and particularly private entrepreneurs. Both social and economic infrastructures were very rudimentary or completely lacking.

During the late 19th to the early 20th centuries, the area comprised of the Adamawa Emirate, and the

Muri Emirate (including Ibi and Wase divisions), jointly called Adamawa Province, and the old Sardauna Province. Adamawa Province, which occupied more than half of the land area of Gongola, was established in 1926 when the old Muri province was dismembered, and the Muri and Wase Emirates became incorporated as divisions in the new Adamawa province by the colonial administration. Since then Yola became the administrative Headquarters of Adamawa province. However, the administrative functions of Yola started much earlier in the nineteenth century when Modibbo Adama (a learned Fulani Muslim leader of the Islamic Jihad in the upper Benue region) founded Yola as the headquarters of the "Fombina" Kingdom (Sa'ad, 1977). In the eighteenth century some parts of "Fombina" was placed under German rule in the Cameroon. Later when the French fought and defeated the Germans in this area, this part of "Fombina", came under joint control of the British and the French, and were later merged to become part of Northern Nigeria when the population voted in favour of this during the 1961 plebiscite.

This new area comprising Mubi, Ganye and Mambila Divisions become known as the Sardauna Province with its administrative center in Mubi. Both Adamawa and Sardauna Provinces become part of the former Northeastern state in 1967. In 1976 that the two Provinces (Adamawa and Sardauna) were carved out of the Northeastern region, and merged with the Wukari division of Benue Province in the south to become Gongola state (now referred to as the region), fig. 1.

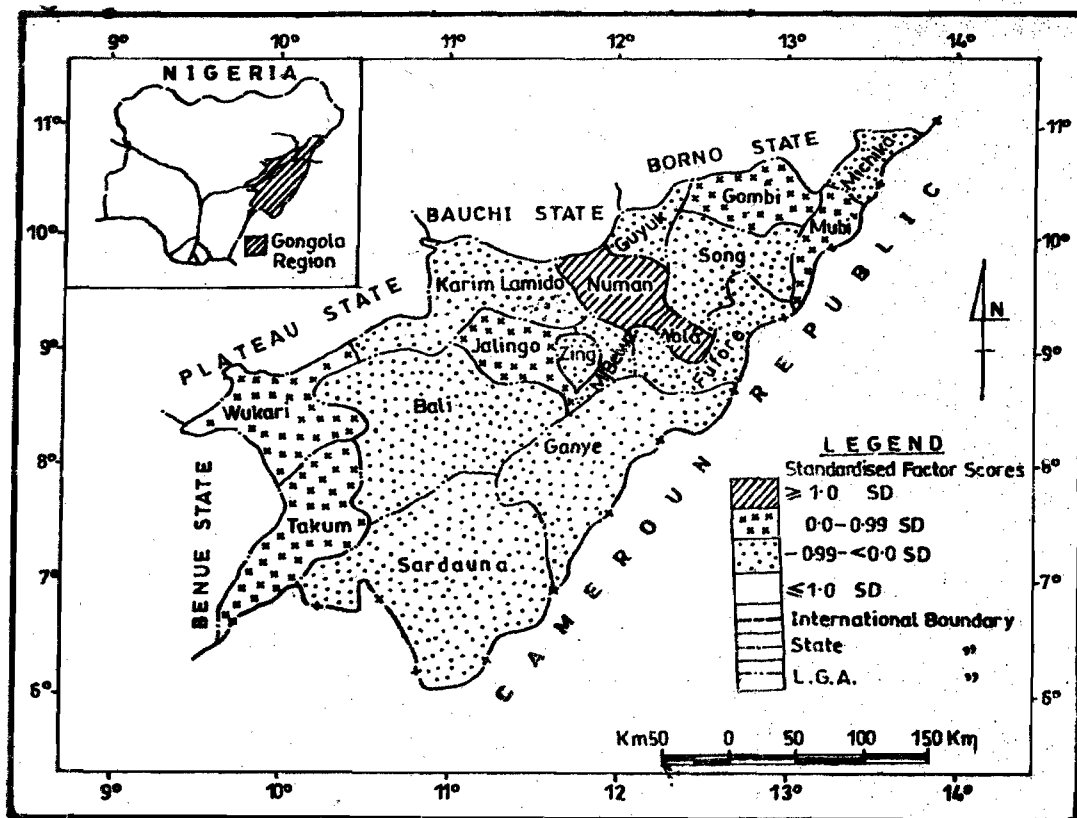


FIG. 1: THE LEVEL OF PROVISION OF URBAN AMENITIES/INFRASTRUCTURE IN GONGOLA REGION (SOURCE: AUTHOR'S FIELD DATA)

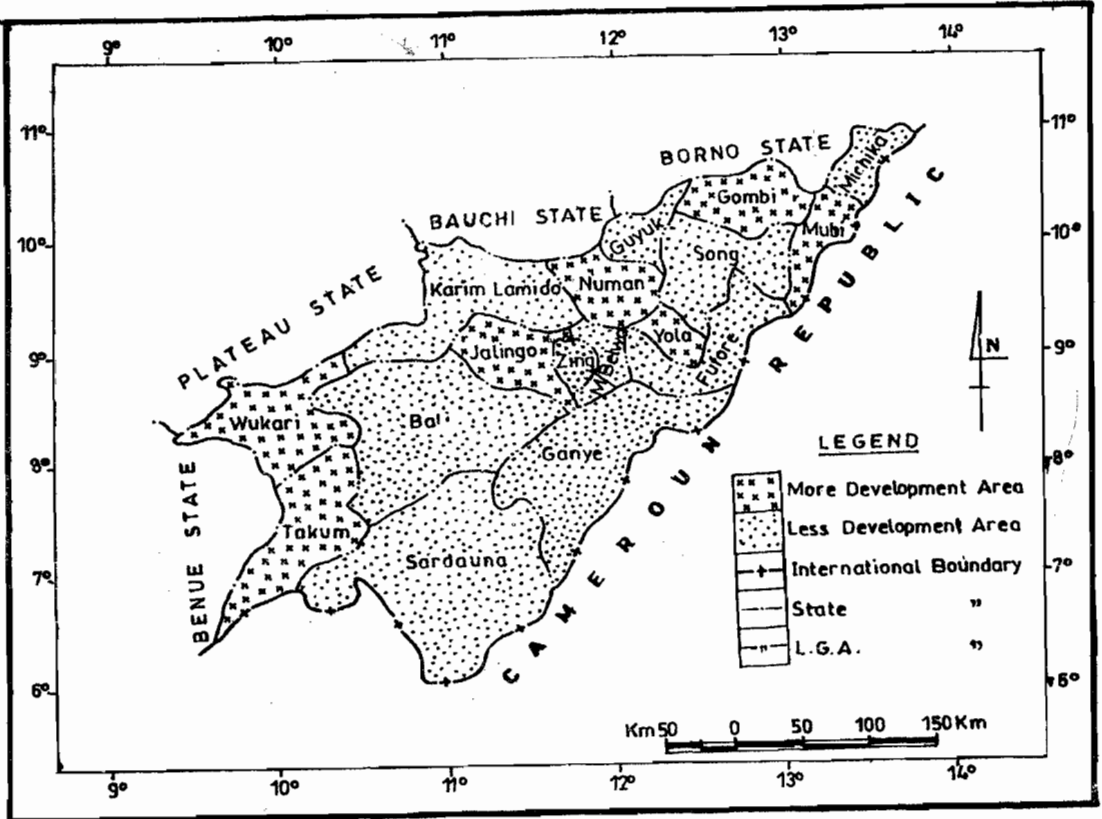


FIG. 2: SPATIAL PATTERN OF DEVELOPMENT IN THE GONGOLA REGION
 (SOURCE:- AUTHORS FIELD DATA)

With an estimated land area of about 102,067 square kilometers, Gongola region lies between longitudes $90^{\circ} 20' E$ and $13^{\circ} 45' E$, and the parallels of $6^{\circ} 25' N$ and $10^{\circ} 45' N$. It shares borders on the west with Bauchi and Plateau States, on the North with Borno state, while Benue and Cross River States border it on the southwest and south, respectively. An international border running north-south separates Gongola region from the Republic of Cameroon on the east. By its relative location and geographic spread, the Gongola region became the second largest in land area among the nineteen (19) states of the Federation between 1976-1991. Gongola region was also about the most ethnically plural region in Nigeria having about 104 different ethnic groups. In fact many had seen ethnic diversity as the bane of political stability and development in the area.

To enhance the process of development and political stability the area was further subdivided into seventeen (17) local Government areas (1976) which are not only expected to bring development to the grassroots, but also to reduce the problem of ethnic heterogeneity and antagonism, and the dominance of a stronger group over many other weak ones (Fig.2). To really achieve the objective of fairness and spatial equity this region also had 57 administrative districts based principally on cultural and historical factors, which sought to emphasize ethnic homogeneity and historical circumstances uniting the people.

THE RESEARCH PROBLEM AND OBJECTIVES

By 1976, the region called Gongola was a particularly remote area, highly inaccessible from all major centres of economic and political life in Nigeria. Generally both social and economic infrastructure were grossly inadequate or simply lacking while internally, the little available appear to be spatially concentrated in a few locations thereby creating the problems of regional inequalities. Sectoral inefficiency and backwardness became very glaring in the region's development process. The burden however, still remained on government (the public sector) to plan, implement and monitor development policies and programmes that can stimulate and sustain a spatially balanced development especially in a situation where private sector investment is grossly inadequate for any meaningful development. This must however starts from a proper understanding of the nature of the regional problem in the region, which so far was yet to be studied and understood.

It is in this regard that this study is concerned with two major research questions as the basis for understanding and providing probable solutions to the regional problem in the region. The questions are;

- i) To what extent is the development of economic and social infrastructure in the Gongola region are spatially equitable?
- ii) Could the observed pattern of socio-economic development be associated to any kind of deliberate planning?
- iii) What are the likely determinants of the existing (observed) pattern and levels of development in the region?

The main objective of this paper therefore, is to determine the spatial pattern of development and its correlates as a guide to future planning to influence regional development in the desired manner.

THEORETICAL BACKGROUND

Governments generally appear to be concerned about two important roles in the process of development. In both developed or the developing world, government plays the role of a provider of social overhead capital and "performs regulatory functions that would compensate for the failures of free market forces in the regional economy" (Krueger, 1990:9). In other words tackling the problems of regional backwardness and spatial inequalities requires direct or indirect government intervention because economic underdevelopment and regional inequalities in development may be self-perpetuating (Myrdal, 1957).

Various theories have been advanced to explain the processes of regional development. These include the historical (Rostow, 1960; Rodney, 1972; Bhatt, 1980) and theoretical (North, 1955; Siebert, 1969; Myrdal, 1957; Richardson, 1977) models.

One of the theoretical models is the export base theory (North, 1955). The main thrust of the model is that regional growth is promoted mainly by the capacity of a region to produce goods and services, which are demanded by other markets outside the region. It assumes that through exports from, and financial flows into the region, the internal market expands and brings about the overall growth of the regional economy through multiplier effects.

Unlike North and Ricardo, Friedman (1966) proposed the theory of polarized development or the core-periphery thesis to explain the process of regional development. His model brought into focus the wide acceptance of the growth center idea as a regional development strategy. The idea is that economies of scale found in the largest cities would provide high rates of return on investment, and bring about diversification of the growth-center economy. Goods services, ideas and innovations developed in the growth center would be exported to the country's hinterland to promote wider development in the country. Through the free operation of market forces economic growth would "trickle" down throughout the region. The city dominated functional region strategy which is simply the export base model spatially translated relies on the twin concepts of "equilibrium" and "polarized development".

The idea of polarized development was first articulated by Myrdal (1957) in his circular and cumulative causation model. The circular causation theory draws heavily on the real and assumed benefits and costs of agglomeration economies in order to explain the progressive clustering of economic activities and the possibility of spread effects later. This makes it more consistent with the actual social and economic process than the earlier static models like North (1955).

Within the framework of the polarization theory, Hirschman believes in the spontaneity of the spatial equalization process while Myrdal is less optimistic, hence his (Myrdal's) advocacy for public policy intervention to check the tendency of the capitalist system to create inequalities.

Friedmann is of the belief that the problem of unequal development must be addressed first by a policy that tries to equalize both regional and interpersonal access to the means of accumulating political and economic power. Economically Friedmann, like Myrdal, also believes in a direct public policy intervention in the development process, rather than allowing the autonomous process of equalization to result from free-market forces. This is particularly important for a developing country like Nigeria - a multi-ethnic, multi-religious, highly pluralistic society - in selecting regional policy instrument or strategy. This is more so for the Gongola region, which is on the periphery of the country's economic, political and social life.

MATERIALS AND METHODS

To achieve the objectives of this paper data on 11 carefully selected indicators of development (table 1) were collected, from both secondary and primary sources. The multi-dimensional nature of development and particularly the difficulty of defining the concept and identification of its measurement criteria have been always been a subject for debate. The corollary is that the spatial content of development may context specific, depending on the socio-economic or cultural setup being investigated.

For the specific purpose of the Gongola-region therefore the criteria for understanding spatial contents of development are determined objectively from the planning objectives and public policy goals of the government. This resulted in the identification of eleven (11) indicators of development.

The selected variables broadly represent the productive and consumptive aspects of socio-economic development, which can also be translated as the economic growth and social well-being dimensions of development. In the category of indices of economic are food production (agriculture), road transportation (roads network density), industrial employment, postal and telecommunications facilities and urbanization. In addition the indices of education, health services, water supply, housing and electricity supply are included, representing the broad category of the consumptive aspect of development and are obvious contributors to the general well being of the people of the region. The population dimension determines not only the extent of consumption of social and economic goods, but it also indicates some aspect of the productive assets of the region. Population is an important factor in planning for both consumption and production in the economic system. An aspect of ethnic homogeneity is included as a surrogate for the political dimension of the internal dynamics of the development process.

Two major analytical tools were adopted as the basis for regional analysis. These include factor analysis to observe the spatial pattern generated in the region from past planning efforts, and a spatial autocorrelation analysis to investigate any likely spatial association in the observed pattern.

The dogma in geographic research is that what happens in one place may not necessarily be independent of what happens in another. In other words, for any spatially located data, which results from some geographic processes, the variants cannot be assumed to be spatially independent. Thus the spatial pattern of development in any region, which is due to some geographical process relating to public policy, should as much as possible show elements of spatial interdependence (autocorrelation) whose nature, extent and direction has to be understood. In practical terms, it means that the social, economic, political, and possibly environmental factors influencing and shaping the development of any local government area in the region may not be the functions of the specific characteristics of that local government area alone, but may

also be due to its ties to other places within the region. In other words we are assuming that the spatial pattern of development in the Gongola region cannot be due to chance. Rather, we suspect that it is due to some deliberate or organized process of location-allocation (i.e. regional planning policy) that recognizes the mutual interdependences inherent between the various geographical subunits in the region. We are therefore interested in determining whether the emergent pattern of development in the Gongola region is the result of a non-random process resulting from deliberate government planning decisions.

The most frequently applied measures of spatial autocorrelation are the *join count*, the *I* and *C* statistics (Cliff et al, 1975; Cliff and Ord, 1981; and Abumere, 1980). The joint count statistics is a nominal measurement of autocorrelation based on a binary classification of the spatial data. It tries to observe whether or not an event has occurred in any two adjoining regions or places and calculates the extent of spatial autocorrelation. On the other hand the *I* and *C* statistics are measures for an interval scaled data (Cliff and Ord, 1973). Abumere (1980) applied both the *join count*, and *I* and *C* statistics in his study of the spatial trend of economic development in Bendel State, Nigeria. His aim was to determine the effect of proximity to coastal locations on the spatial trend of economic development.

Since we are interested in the relative, rather than the absolute characteristics of the spatial units in terms of development within our study area, the join count statistics is preferred. Our purpose is to determine whether the presence of some specific quality or characteristics in any area makes its presence in the neighboring areas more or less likely. In other words we would like to find out if the distribution of the factors defining the pattern of development in the Gongola region is due more to chance than being the result of any systematic planning.

The *join count* technique tries to investigate the existence of spatial interdependence (autocorrelation) in a distribution pattern, by evaluating the departure of the observed values (defining that pattern), from the random expectation (i.e. the standard normal deviates) under the null hypothesis. In determining the nature and extent of spatial autocorrelation the locations of the observations (i.e. spatial units) are usually assumed as existing *a priori*. We therefore focus attention on the spatial relationship between the variant values of the spatial units. This is unlike the case in nearest-neighbor analysis where the interest is to describe the spatial pattern formed by the units themselves, relative to each other.

Assuming that our study area is finitely partitioned into a number of (*n*) sub-units [e.g. Local Government Areas] and supposing also that the observed value of any of the sub-units (say *i*) with respect to a variable *X*, (e.g. a development indicator) is x_i . If for every pair of sub-units (*i* and *j*) in the study area the sampling which yielded observations x_i and x_j respectively are uncorrelated, then there is said to be no spatial autocorrelation in the study area over the variable *X*. The measure of spatial autocorrelation is defined as a function of the values of the observations (x_i) for the areal sub-units on the variable *X*, and the contiguity between any two areas (*i* and *j*) with respect to *X*. Thus, Cliff, et al, (1975) define the general form of the function $F(x)$ measuring spatial autocorrelation as,

$$F(x) = \sum \sum w_{ij} F(x_i, x_j) \dots \dots \dots (1)$$

where w_{ij} is a predetermined weight defining the link between areas *i* and *j* with respect to their scores x_i and x_j on *X*.

The number of joins, in the *join count* statistic are defined by Cliff and Ord (1973), Cliff et al, (1975) and Haggett et al (1977) as,

$$BB = \frac{1}{2} \sum \sum w_{ij} x_i x_j \quad i \neq j \dots \dots \dots (2)$$

$$BW = \frac{1}{2} \sum \sum w_{ij} (x_i - x_j)^2 \quad i \neq j \dots \dots \dots (3)$$

$$WW = \frac{1}{2} \sum \sum w_{ij} (1-x_i)(1-x_j)^2 \dots \dots \dots (4)$$

The join count statistics is based on a nominal scale data. The most commonly used is a binary classification of the data in the form of 'present' or 'absent'. In other words it tries to observe whether an

event has occurred in area (i) or not. In this case if x_i is the event we say,
 $x_i = 1$ if the event did occur
 $x_i = 0$ if other wise.

For ease of interpretation, the two alternatives (i.e. $x_i = 1$ and $x_i = 0$) are coded black (B) and white (W), respectively. Thus in order to determine whether events in neighboring areas are spatially auto-correlated or not we count the number of black-black (BB), black-white (BW) and white-white (WW) joins which occur in the study area with respect to the variable X. The calculated value of either BB, BW or WW joins represent the observed (empirically determined) number of each type of join in the system. This is usually compared against the expected value of the BB, BW or WW joins under the null hypothesis of "no spatial autocorrelation" and tested for significance. If any two areas have a common boundary of positive non - zero length, then they have a join. Thus a join may link two black coded (BB) areas, two white coded (WW) areas, or black and white coded (BW) areas.

To compare the observed number of joins against the expected values, we assume that the observations were generated at random. Hence our random expectation may be computed either under the assumption of free sampling where each area is independently colour coded black (B) with probability p , and white (W) with a probability $q = 1 - p$; or under non-free sampling (i.e. sampling without replacement), where each area is coded by exhaustive random sampling from a population of n_1 black areas and $n_2 (= n - n_1)$ white areas. This therefore assumes that each area has the same probability of being either colour coded B or W but subject to the condition that there are n_1 areas coded B and n_2 areas coded W.

Cliff, et al (1975) and Haggett, et al, (1977) have given the equation for calculating the expected number of BB and BW joins as well as their respective variances under the null hypothesis, thus;

Under free-sampling.

Expected value of

$$BB = E(BB) = \frac{1}{2} W p^2 \dots\dots\dots(5)$$

Variance

$$\text{var}(BB) = \frac{1}{4} [s_1 p^2 + (s_2 - 2s_1)p^3 + (s_1 - s_2)p^4] \dots\dots\dots(6)$$

$$\text{and } E(BW) = W p q \dots\dots\dots(7)$$

$$\text{Var}(BW) = \frac{1}{4} [s_2 p q + (s_2 - 2s_1)p \cdot q \cdot (p+q) + 4(s_1 - s_2)p^2 q^2] \dots\dots\dots(8)$$

p = probability of an area having a B -code , and $q = 1 - p$ =probability of an area having a W - colour code.

In all cases the quantity W_i has three forms, which Cliff and Ord (1973) described as:

- a) The Rook's case, where only cells or areas having common edges are counted for joins,
- (b) The Bishop's case, where the joins refer to cells having only common vertices,
- (c) The Queen's case, where the joins with either common edge or common vertices are counted.

In this study the probability of any area being colour coded black or white can only be estimated from the data indicating a free sampling model. It is therefore considered most appropriate to analyze the data using equations (1 - 4) and (5 - 8). If we set a null hypothesis of the form:

H_0 : the colour of a given area is fixed independently of the colour of all other cells or areas.

Then H_0 can be tested using the tables of the normal curve at various levels of significance, such as 0.1, 0.05, or 0.01 percent.

RESULTS AND DISCUSSIONS

The indexes of development were analyzed to evaluate and interpret the structure of development as defined by the selected variables in the sub-region. This was done, against two premises;

- i) That the spatial pattern of development observed in the region is not due to chance, rather it tends towards a spatial concentration of the more developed areas in favor of the local government areas proximal to the regional capital. This means that the development process has a spatially centripetal effect.
- ii) That public policy has not done much to effectively redress the problem of sectoral and spatial imbalance in the pattern of development in the region.

If these premises were true, it would then mean that the political, economic and geographical factors, which gave initial advantage to some places, are the major determinants of the pace and direction of regional development, rather than any deliberate corrective government policy. It would therefore also mean an endorsement of the dominating influence of "autonomous market forces" and the inability or failure of government to deliberately influence the process and pattern of development in the region.

The eleven variables measured over the seventeen local government areas have been expressed in different units, which could limit comparability. To facilitate comparability and proper interpretation of results the data was transformed into the standard normal deviate (the Z-value) prior to correlation and factor analysis to discover groups of interrelated variables that could objectively define the dimensions of development. This was achieved through factor analysis.

The factor analysis extracted five factors with eigen values greater or equal to 2.0 which accounted for as much as 83.0% of the variance in the data. The corresponding factor scores were estimated (table 1). This was considered sufficient to achieve the desired parsimonious description of the large set of variables. Moreover, factors with eigen values below 2.0 appear in this case, to have too few significant variables that make interpretation meaningless.

The spatial manifestation of the structure of development that emerged from the analysis in our opinion included urban amenity, transport infrastructure, rural amenity development, ethnic or cultural and female empowerment factors. The scores of the four factors, which represent the systematic aspects of regional development in the region, were determined. In this paper, however we focus on the urban infrastructure development factor (Factor 1), which indeed is the most important as far as the factor eigen value (of 11.01) is concerned. This is also for the fact that in most parts of Nigeria the level of development of any state, local government or district is often judged simply by reference to its level of development of its urban infrastructure. The pattern generated is presented cartographically for our visual appreciation and to aid further analysis.

A test of spatial auto-correlation is carried out in respect of spatial pattern displayed by the urban infrastructure factor. This is done to determine whether there is spatial auto-correlation in the various dimensions of development. To achieve this, the spatial sub-units are color-coded either black (B) if the phenomenon under investigation has occurred, or white (W) if otherwise, using a binary classification. For this analysis, the factor scores are classified into a range of two classes depending on whether an area scores a value greater or less than 0.0 standard deviation units. A score above 0.0 standard deviation units is taken as indicative of the presence of the phenomenon in question. On the other hand, a score below 0.0 standard deviation units represents absence of the phenomenon in the geographic space.

Spatial auto-correlation is determined by counting the number of BB, BW, and WW-joins, which occur in the space, in respect of each phenomenon (using equations 1-4). These are compared against their random expected values under the null hypothesis of "No spatial Auto-correlation" among the local government areas. In this regard a large number of BB- joins (observed) compared with the number under a random expectation implies clustering of the B- coded areas in the spatial system, while a lot of BW- joins compared with the expected value under the null hypothesis would mean some kind of alternating pattern of the B and W coded areas (i.e. a regular lattice). Since we are interested in investigating spatial auto-correlation among the local government areas in terms of the pattern of development in all directions the queen's case.

Table 1: Standard Normal Deviates of Factor Scores

Local Government Area	Factor I	Factor II	Factor III	Factor VI	Factor V
Bali	-0.920	1.010	2.070	1.600	0.030
Fufore	-0.860	-0.500	0.610	-0.100	-0.620
Ganye	-0.020	0.020	0.910	-0.160	-0.530
Gombi	0.040	0.320	-1.330	0.140	-0.850
Guyuk	-0.660	-1.150	-0.240	-0.080	0.040
Jalingo	0.300	0.660	0.070	-0.390	0.530
Karitu Lamido	-0.840	-0.150	0.810	-1.190	0.870
Mayo Belwa	-0.420	-1.170	0.480	-0.630	-0.020
Michika	-0.070	-0.140	-1.670	-0.210	-0.680
Mubi	0.670	0.360	-0.630	-0.920	-0.150
Numan	1.440	1.100	0.910	-2.240	-1.790
Sardauna	-0.230	2.23	-0.200	-0.650	2.500
Song	-0.750	-0.830	0.500	1.470	-0.410
Takum	0.050	0.620	-1.440	1.430	-0.980
Wukari	0.020	0.520	-1.210	1.040	-0.950
Yola	3.280	-0.820	0.840	-0.390	0.520
Zing	-0.180	-1.980	-0.480	0.670	1.520

Source: Calculated by Author from empirical data.

THE PATTERN OF PROVISION OF URBAN AMENITIES

Spatial auto-correlation in the spatial incidence of urbanization (fig.1) in Gongola Region was calculated, under the assumption of free-sampling and the null hypothesis (H_0) that "the pattern of provision of urban utilities observed in the region is due to a random process". It means that each local government area is assumed to have been independently colour coded *Black* (B) or *White* (W) by a free-sampling process, (i.e. sampling without replacement) . In this case each area has the same probability ($p = 0.5$), of being either a B or W coded area.

In this analysis the BB- and BW- join statistics are evaluated for their observed and random expected values under the assumptions earlier stated. The expected number of BB- and BW-join statistics are compared with their corresponding observed values. From the calculations using equations 1,2 and 3, there are 3 and 22 BB- and BW-joins respectively. Their corresponding expected values are equal to 9 and 18 respectively. From these values it is clear that the expected number of the BB- joins is far in excess of the number empirically observed. This is an indication of non-clustering of the BB-joins. On the other hand the larger number of the BW-joins (= 22) compared to the number under random expectation (i.e. 11), further confirms the non-clustering of the BB coded areas in the system. This implies that there is no contiguity in the spatial incidence of developed areas in the region.

In testing for spatial auto-correlation we hypothesized that the auto-correlation coefficient (P), expressed either as the difference in the value of the BB-, or of the BW-joins statistics should be less or greater than zero. Thus the null hypothesis (H_0) is that $P \neq 0$, i.e. "there is no spatial autocorrelation in the variables defining development in the region". The analysis reveals some negative auto-correlation as depicted by the low and high values of the expected BB- and BW- joins statistics, respectively. This suggests that proximity to a more developed area is not a necessary factor shaping the pattern of development in the region.

The BB- and BW-joins further analyzed, for the test of randomness using the standard normal probability distribution. The standard normal deviates of the BB and BW statistics were calculated (table 1) using the equation of the standard normal deviate (Z):

$$Z = \frac{\text{Observed BB} - \text{Expected BB}}{\text{Variance of BB}} \dots\dots\dots (9)$$

Using equations 1- 4 the variance (σ^2) of the BB-, and BW- joins are calculated as σ^2 (BB) = 2.31, and σ^2 (BW) = 2.25 respectively. Substituting these in equation (9) above, the standard normal deviates of the BB- and BW-joins are calculated as -2.59 and +1.78 respectively. Reference to the normal probability tables shows the critical Z values for rejecting the null hypothesis at the 0.05 level, (in a one tailed test), $Z = 1.64$. If the signs of the calculated Z value are ignored, we find that the calculated value of the standard normal deviate for the BB- joins (2.59) lies outside the critical limit for accepting the null hypothesis. In this case therefore, we have no sufficient grounds for accepting the null hypothesis, and so we accept the alternative that "the process that produced the pattern of the BB - joins is not random". This means that in Gongola Region the spatial pattern of the distribution of urban development may be associated with some deliberate and systematic process of public policy making. This is further supported by the fact that the BW - joins also have a standard normal deviate (=1.78), which lies outside the critical region.

Urbanization and regional policies sometimes converge and compliment each other. While urbanization tries to steer and concentrate development in the more important urban places, regional policies tend to attract and promote development in backward regions. Usually two policy goals are involved; i.e. achieving efficiency (which may be economic growth), and the attainment of spatial equity in the distribution of the benefits of the development process. The primary concern as reflected in the various development plans in region is to achieve efficiency through the promotion of equity. This is a manifestation of the recognition of the importance of towns as important regional centers for economic growth and for decentralization of development. While this may be reflected in the creation of local government areas and the designation of selected towns as headquarters or local growth centers, there was a deliberate attempt to promote the growth and development of particularly the pre-1976 provincial and Divisional headquarters such as Yola, and Mubi as Provincial capitals, and Jalingo, Wukari and Numan as Divisional capitals.

The choice of these towns was mainly desired to promote rural development (through trickle-down effects) as means for reducing or eliminating spatial inequality in development. The idea was, initially, to decentralize development from the pre-1976 concentration centers around Maiduguri (the former North-eastern State capital.) For this strategy to be successful however there was need for some form of integrated planning

between the urban (growth centers) and the rural (dependent) hinterlands. This is because regional development is an integrated process involving rural-urban integration, social-economic sector integration, as well as procedural integration, which are not supposed to be mutually exclusive.

Since 1976 when the Gongola sub-region was politically derived from the former North-east region government policies have tended to operate in favour of the development of the urban sector impliedly as a panacea for rural change.

CONCLUSION

The dualistic nature of the rural/urban socio-economic system in Gongola region, overwhelmed by technological backwardness, mass illiteracy and poverty, mean that both the traditional and modern sectors must at least, at the early stages of our development, rely on the interventionist or paternalistic role of public policy to correct both existing and potential causes of spatial inequality in development. It is therefore the responsibility of government to plan to eliminate or at least minimize the causes of discomfort and disequilibria in access to the means for personal and regional improvement in the socio-economic and political life of the people. These include planning for economic, educational, and health infrastructure, etc for the people in all locations.

Government had at different times and stages identified what is usually called priority sectors and programs for the concentration of public investment for the region development. This study has however revealed that structurally, the development efforts of past governments in the region have tended to emphasis or at least reflect a cumulative result in the development of urban utilities, infrastructure and services. If the extent of urban infrastructure development is regarded as an indication of the general level of economic development, then some degree of economic development was achieved since Gongola was carved out in 1976. However, there is spatial concentration in favor of the old growth centers, i.e. polarization of the benefits of socio-economic planning encouraged by deliberate government policy, hence the expectation for a spatial balance in development has not been realized. This is not too surprising since different places have different constraints and abilities as well as different historical and political circumstances, which make them either growth centers or peripheries. What is required is therefore a proper assessment of the region's resources endowment and application to the planning process in a manner that spatial development process recognizes the comparative advantage of each area. The system of geopolitical growth centers should be further encouraged through the design of lower order growth points or rural development areas below the district level. A grass root Development Planning approach (Bashir, 1999) is advocated. This involves at least seven principles, which have economic, social, political and regional goals:

- i. The integration industry and agriculture through a purposeful selection and location of these investments to exploit the comparative advantages of each area in terms of resource endowment and development;
- ii. The integration between large and medium scales industries on one hand and between these and the small-scale enterprises to stimulate economic growth and employment opportunities.
- iii. The integration of the urban and rural based enterprises through (i) and (ii) above and the creating forward and backward linkages through mutual interdependence.
- iv. The principle of equitable income redistribution through deliberate policies of selective taxation, subsidies on some of the direct and indirect benefits of development like social services (especially in favor of the poor and rural communities).

- v. The principle of migration control through appropriate policies on manpower development that also binds the individual to his rural environment, and promotion of rural collective entrepreneurship. This also means adoption of the relevant technology.
- vi. The spontaneous and integrated provision of social services like education, health, security, etc. through communalisation of resources by the local communities.
- vii. The principle of spatio-political devolution and collaborative participation various social, cultural groups in all policy decisions that directly affect the life of the community.

Regionally, some form of spatial integration is a fundamental prerequisite if development in-equalities are to be minimised and people's basic needs to be satisfied.

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