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Spatial Development Inequalities in the Niger Delta States of Nigeria.

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ABSTRACT - This study examined the spatial inequality of development among the nine states of the Niger Delta region of Nigeria. Based on the results of Principal Component Analysis applied to 45 indices of development. It revealed regional inequalities of development in the region. Many indicators concentrated on some states with Delta State leading, followed by Imo, Abia, Cross River, Akwa Ibom, Rivers, Edo, Ondo and Bayelsa States. The major indices in the components that contributed to developments were infrastructure. From the overall result, it is safe to say that the Niger Delta region is unevenly developed.

Key words: Development, Spatial, Regional, Inequalities Disparities.

INTRODUCTION

The dynamics of development in the Niger Delta can be assessed looking at the interdependence of the level and pace of urbanization in relation to indicators of economic development. Despite impressive progress made in economic development, inequality still characterize the pattern of economic development in the Niger Delta region. Spatial inequalities are directly associated with access to virtually all products and services, e.g. health, education, employment, housing and infrastructure.

The development of place relates to social policy with particular emphasis on basic social infrastructure provision. Based on the above scenario, it becomes imperative to closely study the problem of inequality in development levels among geographic units of the Niger Delta. This study therefore, set out to examine the

spatial development inequalities among the Niger Delta States. Sequel to this, the objectives of the study will include:

- a. To identify the nature of development inequalities among the nine (9) states of Niger Delta.
- b. To investigate the uneven spatial patterns of levels of socio-economic development in Niger Delta.
- c. To assess appropriate development models

CONCEPTUAL FRAMEWORK

One of the theories of regional inequality is the “growth pole theory” which was first developed by French economist Francis Perroux in 1950, and later modified as “growth center models” by the works of Myrdal (1957) Hirschmann (1958), which led to a transformation of the growth center theory to a model of regional development. At its introduction in 1950, Perroux used the growth pole as a synonym for a firm or industry or groups of firms or industries. Within the growth poles, growth and change are initiated while connections between the poles, in terms of flows of inputs and outputs, transmit the forces generated. In this way growth in the matrix is directly related to the activity of the poles themselves and also to the degree of interconnection between them.

Myrdal (1957) used the term “Circular and Causation” to refer to the phenomenon whereby the initial gaps in levels of development between the relatively more developed and the poor regions tend to widen over a period of time. According to Myrdal, inequalities may begin rather gradually in a region as certain areas take the lead ahead of others due to their particular endowments in relation to natural man-power or other economic advantages. Sometimes, deliberate public policies may start the process of inequality through the channeling of resources to particular regions to satisfy certain planning objectives. Whatever the initial causes or processes generating the inequalities, Myrdal contends that once the spatial pattern emerges, it sets in motion a series of interrelated processes which attract population and their supporting activity systems to particular regions. This in turn tends to influence and reinforce the processes operating in the region to react upon emerging and growing inequalities in levels of development (Myrdal 1957). As the gaps in levels of development continue to widen the vital capital and human resources of the poor regions tend to migrate to the regions, thus leading to further stagnation at the periphery (Mabogunje 1980).

The works of Akpan (1992, 2000) in South-Eastern Nigeria served as a reference point to this study. He used factor analysis, multiple regression and cluster analysis to determine pattern of development in the area. In another similar study, Akpan (2000) examined the pattern and variation in levels of development among the 24 former local Administrative units of Akwa Ibom State. Using factor analysis

for the data on 26 indicators of development, it was found that the development surface in the state could be described in terms of 7 factors, namely urbanization, communication, Revenue, Education, Cooperatives, Industry and Agriculture. He established that significant differences existed in level of development among the administrative units and that these units could be categorized into three classes as, the developed, fairly developed and the disadvantaged.

According to Fair (1982) the major theoretical underpinnings of the growth pole strategy rests on the basic ideas that the concentration of investment at a few centres will achieve economics of scale. The regional development policy implemented in 1960 relied heavily on the growth pole strategy and industrial decentralization of secondary industries to the less development regions of South Africa. (Fair 1982).

THE CORE-PERIPHERY MODEL

The origin of the core-periphery model can be traced back to a number of interrelated developments, which occurred during the mid-twentieth century. It was suggested that resource-base theories are rate and level of regional development in space. These developments included, in the first place, theories on the location of economic activity. And especially industrial activity, by economists such as Isard (1956) Hirschmann (1958) Myrdal (1957).

The core periphery model describes the spatial imbalances in economic development at all scales. In many countries particularly the less developed countries, the concentration of activities at certain points result in the division of the country into two main types of regions namely, the flourishing core region (e.g. urban, mining or commercial agriculture areas) and the disadvantaged peripheral region (i.e. areas which are socially, economically and politically less developed). The inequality is not restricted to the country level but occur at all geographical scales such as district, provincial and continental scales and even on a global level.

According to Myrdal (1957), the core regions of the space economy are progressively becoming more and more developed. He argues that if events or economic activities follow an uncontrolled course, backwash effects perpetuates growth in the expanding core region and retards growth elsewhere. The result would be the widening of the gap between the rich and the poor (Enoh 1981).

The existence of a core-periphery structure in any development model implies that economic development in space is usually uneven; the core is highly developed while the periphery is socially, economically and politically backward and in some cases even declining (Harmes 2001). The level of development has a negative correlation with distance from the center. In other words the level of development decreases as distance from the core increases.

MODEL OF DEVELOPMENT REGIONS

Friedman (1966) extended the original core-periphery model to include core, upward transitional, downward transitional, resource frontier, and special problem regions. In the model of development regions (Friedman 1966), the core remains unchanged and continues to occupy the central position in the system (Just like in the original core-periphery model). The periphery however is divided into upward transitional, downward transitional, resource frontier and special problem regions. The upward transitional regions are characterized by net immigration, rapid economic growth and improvements in infrastructure although these are usually smaller urban centres than the core regions. The downward rural economies that are stagnant or declining. The resource frontier regions are zones of new settlement in which virgin territory is occupied and made productive (Friedmann, 1966). Development in the resource frontier regions usually involves large-scale investment in a natural resource. The special problem regions are those regions, which require a special development approach because of the peculiarity of their resources or location.

THE CORE REGION

According to Friedmann (1966) core regions are characterized by their promise for economic growth. It has a huge concentration of economic activities. The core region is spatially a small area but it has highly developed infrastructure (such as water, transport services, health facilities and educational facilities). The core has a high capacity for innovation and change population and cultural diversity are usually high in the core region. Politically, the core region is very powerful. Political matters normally stay in the core region.

The core region has to deal with a multitude of problem, such as how to sustain growth, absorb new comers into local labour force and provide for their needs.

UPWARD TRANSITIONAL REGION

Upward transitional areas include all settled regions whose natural resource endowment and location relative to the core region suggest the possibility of greatly intensified use of resources (Friedmann 1966). This type of region is also characterized by large-scale immigration. An upward transitional region does not consist of a single dominant urban concentration but of various smaller urban center. This type of region usually produces economic development due to increasing commercial demand in the core region.

The problems of this region are associated with rapid economic growth, agricultural adjustment to more capital intensive farming, improvements in marketing organization and improvement in transportation, urbanization and industrial development (Friedmann 1966).

RESOURCE FRONTIER REGION

These are zones of new settlement in which virgin territory is occupied and made productive. New resources are discovered and exploited in the areas. Primary industries such as agriculture, mining and forestry are usually the economic activities found in the resource frontier region.

DOWNWARD TRANSITIONAL REGION

The downward transitional region are old established settlements whose essentially rural economies are stagnant or in decline, and whose peculiar resource endowments suggest as optimal a less intensive development than in the past (Friedmann 1966). The problems of downward transitional regions are usually associated with obsolescence and overpopulation relative to the existing possibilities for development

SPECIAL PROBLEM REGION

The special problem regions belong to a category of area that, because of peculiarity of the resource or location, demands a specialized development approach. They often include areas situated on the country's borders, water resource areas, areas that are suitable for intensive tourism development, fisheries and military zones. Special problem regions are usually dispersed throughout the national space economy.

THE STUDY AREA

The Niger Delta covers an area of about 70, 000 km and account for about 7.7% of Nigeria's land mass. The population of the Niger Delta is estimated to be about 20 million (Okoji 2000). The region extends along the coast from the Benin on the West to the Imo River on the East. With the emergence of oil as a major resource in Nigeria, the correspondence of the main oil producing areas of the Niger Delta has resulted in the delineation of the region to include Abia, Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Imo, Ondo and Rivers States.

METHODOLOGY

The data for this study were collected for the 9 states of the Niger Delta. The state capitals were chosen as the units of analysis because it is the spatial unity of development. Thus the state capitals are units for which information on most indicators of development can be collected with respect to this study.

There are indicators that have been used in the measurement of development and thus the focus of the researcher. For this research the data were collected on 45 indicators of development from the nine states of the Niger Delta. The raw data collected from all sources were subjected to editing and processing to avoid bias

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among the selected states. The data generated was analysed using principal component analysis (PCA). The aim of using PCA is to reduce a large number of variables to a smaller number of components, which concisely describe the relationships among observed variables, as well as to understand the underlying processes of the evolving pattern (Udofia 2006).

TABLE ROTATED PRINCIPAL COMPONENT WADING

| VARIABLE LABEL | COMPONENT LOADINGS | | | | CO | ILS |
|---------------------------|--------------------|-------|-------|-------|----|-----|
| | C1 | C2 | C4 | C5 | | |
| Land VI | -.70 | -.06 | -.02 | -.07 | 50 | |
| WaterV ₁ | -.29 | .04 | .07 | -.43 | 28 | |
| Bore V ₃ | -.28 | -.34 | -.19 | .31 | 35 | |
| Road V ₄ | .59 | .17 | .18 | .29 | 50 | |
| Elect V ₅ | .68 | .07 | .05 | .10 | 48 | |
| Park V ₆ | .12 | .12 | .75 | .09 | 59 | |
| Veh V ₇ | .03 | -.09 | .58 | -.16 | 37 | |
| MarkV ₈ | -.43 | -.07 | .09 | -.06 | 21 | |
| Tale V ₉ | .63 | .62 | .25 | .15 | 88 | |
| Bank V ₁₀ | .24 | .51 | -.13 | .36 | 46 | |
| Hotels VII | .47 | .74 | .14 | .09 | 79 | |
| Petrol V ₁₂ | .41 | .65 | .34 | .02 | 71 | |
| House VB | .48 | -.12 | .040 | -.06 | 41 | |
| Pri V ₁₄ | -.05 | -.56 | -.14 | .15 | 35 | |
| See VIS | .07 | -.53 | -.03 | -.06 | 29 | |
| Tert V ₁₆ | .91 | .16 | .05 | -.28 | 94 | |
| Chmch V ₁₈ | .90 | .19 | -.09 | -.27 | 92 | |
| RecrV ₁₉ | .77 | .27 | -.13 | -.10 | 69 | |
| CivV ₁₉ | .86 | .12 | .11 | -.32 | 86 | |
| InwV ₂₀ | .89 | .29 | -.02 | -.13 | 89 | |
| Pol V ₂₁ | .18 | .13 | -.008 | -.02 | 68 | |
| IntRevV ₂₂ | -.16 | -.51 | -.38 | .54 | 72 | |
| RevFOV ₂₃ | -.69 | -.56 | -.44 | .48 | 74 | |
| Ext StaffV ₂₄ | .36 | .49 | -.34 | -.12 | 50 | |
| InsurV ₂₅ | .05 | .02 | .48 | .19 | 27 | |
| Postal V ₂₆ | -.19 | -.26 | -.049 | .049 | 57 | |
| Hosp V ₂₇ | -.11 | .19 | -.12 | .81 | 72 | |
| Hosp Bal V ₂₈ | .39 | .61 | .08 | .25 | 60 | |
| DocV ₂₉ | .31 | .76 | .22 | .21 | 77 | |
| Nvreg Geq V ₃₀ | .51 | .25 | .11 | .24 | 39 | |
| Farmers V ₃₁ | -.06 | -.10 | .19 | .62 | 45 | |
| Farms V ₃₂ | -.05 | .73 | -.29 | -.09 | 63 | |
| Lib V ₃₃ | .29 | .26 | -.39 | .31 | 39 | |
| Cler~V>A | .001 | .30 | .38 | .65 | 65 | |
| Far Pro V)S | -.15 | .10 | .62 | -.04 | 42 | |
| CyRegV ₃₆ | .27 | .40 | -.02 | -.12 | 25 | |
| NtaxiV ₃₇ | .43 | .31 | -.06 | .13 | 30 | |
| TaxPavV ₃₈ | -.17 | .11 | .61 | -.03 | 41 | |
| Indu V ₃₉ | -.05 | .52 | -.49 | -.14 | 54 | |
| Funt VAl) | -.13 | .75 | .39 | .06 | 74 | |
| NurV ₄₁ | .38 | .79 | .14 | .17 | 82 | |
| Lit V ₄₂ | .79 | .08 | -.006 | -.03 | 63 | |
| Empl V ₄₃ | .09 | .18 | .01 | .23 | 10 | |
| Urb V ₄₄ | .60 | .39 | .20 | -.34 | 68 | |
| Eige fvalue | 9.56 | 7.65 | 4.22 | 3.74 | | |
| % Total variable | 21.24 | 16.99 | 9.38 | 8.31 | | |
| Cum % Total | 21.24 | 38.23 | 47.61 | 55.92 | | |
| L | | | | | | |

RESULT AND DISCUSSION

Result of data analysis are discussed in this section. It is divided into two sections; the components of development and the development inequalities among the nine states of Niger Delta.

Components of development in Niger delta

The PCA extracted 6 significant components, which jointly account for 89 percent of the total variance. The first four components (55.92%) that contributed highly to the total variance in terms of eigenvalues are discussed in this study. For component one eighteen variables loaded significantly out of 45 variables. The variables are tarred road V_4 , Electricity V_5 , Telecommunications V_9 , Hotels, V_{11} , Petrol Stations V_{12} , Houses, V_B , Tertiary Institutions V_{16} , Churches V_{17} , Recreation V_{18} , Civil Servant V_{19} , Industrial worker V_{20} , Political Class V_{21} , Vehicle registration V_{30} , Number of Taxi V_{31} , Literacy rate V_{42} , Urbanization V_{45} , Land V_J , and Market V_8 . And it accounts for 21.24 percent. This is named infrastructure component.

The second component which account for 17 percent has seventeen variables which include, Telecommunication V_9 , Banks V_{10} , Hotels V_{11} , Petrol Stations V_{12} , Primary school V_{14} , Secondary schools V_{15} , Internal Revenue V_{22} , Revenue from FG V_{23} , Extension staff V_{24} , Hospital Bed V_{28} , Doctors V_{29} , Farmers V_{32} , Motorcycle Registration V_{36} , Industries V_{39} , Furniture V_{40} , Nurses V_{41} , Employment V_{43} . It is called urban economic component.

Component 3 contributes 9 percent of total variances with eigenvalues of 4.22. Ten variables loaded high which are Parks V_6 , Number of vehicles V_7 , Houses V_n , Revenue from FG V_{23} , Insurance V_{25} , Postal Stations V_{26} , Farm products V_{35} , Tax payers V_{38} , Industries V_{39} , Employment V_{43} . This is service component.

Component 4, accounts for 8 percent of total variance with eigenvalue of 3.74. It has seven highly loaded variables to include, Water V_2 , Internal Revenue V_{22} , FG revenue V_{23} , Postal Stations V_{26} , Hospitals V_{27} , Farmers V_{31} , Clergy V_{34} . It is term socio-economic component.

Development inequalities

Based on the four components extracted from the result, variations in level of development among the states are discussed.

Variations in level of development on component one

On the first component, 7 out of 9 states have positive scores, Delta State, has the highest score of 5.20 followed by Imo State 4.40, Abia State 3.10, Cross River State 3.01, Akwa Thorn State 2.40, Rivers 1.12, Edo 1.09, Ondo

0.73 and Bayelsa 0.19. Bayelsa have the lowest score on this component. For the second component Delta State also lead with 2.9, Imo 2.7, Abia 2.3, Cross River 2.0, Akwa Thorn 1.9, Rivers 1.04, Edo 1.03, Ondo 0.8 and bayelsa 0.7.

For the remaining components three and four, Delta State also has the highest score followed by other states as already indicated in the first two components. One inference that one can draw from these results is that the development inequalities prevail among the nine states of the Niger Delta. This requires that policy options be tailored to address spatial inequality in such a way to invigorate development processes in the various parts of the region.

CONCLUSION

The findings of this study have confirmed the existence of inequality of development among the states of the Niger Delta region. Spatial disparities in levels of development as shown in this study can be redressed by planned action. The urbanization process, which is a rational human solution readjust in relation to the prevailing situation of urbanization of benefit, may further result in stifling of growth in the deprived states.

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