Development Inequalities in Osun State, Southwestern Nigeria

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Abstract

This paper examined the spatial inequality of development among thirty Local Government Areas of Osun State, Southwestern Nigeria. Based on the results of Principal Component Analysis and Logistic Regression applied to 45 indices of development in all the LGAs for year 2001, the paper identified four major components and six predictor variables as determinants of development inequalities among the LGAs in the State. It revealed regional inequalities of development in the state. Many development indicators are concentrated in a few Local Government Areas that are urban based. Majority of the LGAs are lagging behind on the components of development. This portends serious implications for development planning in the state. It can be concluded that the economy of the entire state is largely underdeveloped.
Key Words   Development, Regional Inequalities

Introduction

Despite impressive progress made in economic development, inequality still characterize the pattern of economic development in most parts of the World. A substantial proportion of the World's population remains in poverty and the gap between the richest and the poorest group continues to widen (Mbaku, 1997).

UNDP (1990) sees the poor as deprived of the basic opportunities to lead long, healthy, and creative life due to the mal- distribution of income, assets and human capacities. One of the distinguishing characteristics of nearly all who live in poverty is marginality. Marginalization   can be described in terms of inaccessibility to the means of procuring, transforming and delivering available resources more productively and a situation where deliberate pattern of government investment have placed some people at a disadvantage. Thus, Aboyade (1975) described being poor as resulting from the inequality in the distribution of economic goods, thereby not able to attain normal standard of living. Marginalization has been a factor for the increasing level of inequality of development among regional units.

Inequalities perceived in terms of deprivation and marginalization have been significantly responsible for the agitations for creation of States and Local Government Areas in Nigeria (Abumere, 1998a; Ikporukpo,1986). Creation of new States and Local Government areas has been adopted by successive National Governments as a policy of reducing the level of inequalities among the area units (Abumere,1998b). Osun State of Nigeria is one of the State created through such exercise in 1991.

A fundamental objective of social and economic development of the new democratic dispensation in Nigeria is to improving the welfare and living standard of the people (Obasanjo, 1999). Thus an understanding of the present levels of development in its spatial form is therefore required as a basis for formulating development policies that will bring about sustainable growth among regional units. Development inequality is at varying degrees within and between Local Government Areas in Osun State. This paper

seeks among other things, to identify the nature of development inequalities among the thirty (30) the Local Government Areas of Osun State. It is also to determine the Development surface of the State as a basis for understanding the regional inequalities in the State, as well as for formulating appropriate development policies.

Theoretical Framework

Different scholars have given many interpretations to the meaning of Development. Some scholars tended to equate development with economic growth (Todaro, 1977; Mier, 1964); others have argued that development is a multi-dimensional process, which involves the reorganization and reorientation of the economic and social system. It focused not only on income and output but includes radical changes in institutional social and administrative structures as well as in people's attitudes, customs and beliefs, which will lead to a visible improvement in the quality of life of the people. Myrdal (1957) saw development as an upward movement of the entire social system. Mabogunje (1980) conceptualizes development as involving economic growth, modernization, distributive justice and socio-economic transformation. According to Hooder and Lee (1974), development involves not only economic growth but also conditions in which people in a society have adequate food and jobs, when income inequality among them is greatly reduced and the people are self-reliant. That is, development involves a cumulative rise in the standard and quality of life for an increasing proportion of the population. It is a process of widening opportunities for individual, social groups and territorially organized communities at both small and intermediate scales. It is also the mobilization of the full range of the capabilities and resources for the common benefit in social, economic and political terms (Stohr and Taylor,1981).

From various definitions given by scholars, development seems to be man-centred, which leads to the structural transformation of the economy, society and culture of the people, and permits self-actualization of human potentials. In line with Uphoff (2001) view, development connotes the enhancement of quality of life and increasing people's life chances, their opportunities to get educated, to have food, shelter and clothing and to have access to health and water, etc. It is also to move not just a little way up the ladder of income distribution but to be able to make some significant jumps and most importantly to give their children greater opportunities.

Development does not appear everywhere and all at once but it takes place over time and space. Therefore, it is usually analyzed within a spatio-temporal framework (Friedmann, 1959). Regional development, therefore gives spatial as well as territorial dimension to the meaning of development. It is thus concerned with the improvement of the living standard of the people in an area and is expected to come about through transforming the socio-spatial structures of their productive activities (Mabogunje, 1980). Regional development is also concerned with the spatial diffusion of new techniques and the establishment of new forms of production all of which involve changes in human distributions and movements and in patterns of human activities (Hoyle 1974). It is also a process concerned with the locational aspects of development. It incorporates the recognition of spatial inequalities in socio-economic welfare and the process at work and the strategies involved in modifying changes and bringing more equitable spread of welfare to the majority of the inhabitants of the region (Hermansen, 1972).

One of the basic theories of regional inequality is the "growth pole theory" which was first developed by French economist Francis Perroux in 1950. It was later modified as "growth centre models" by the works of Myrdal (1957), Hirschman (1958), Ullman (1958) and others such as Hicks and Streeten (1980) and Boudeville (1966), which led to a transformation of the growth centre theory to a model of regional development. A prominent feature that characterized regional development model is the concern about the disparity in level of economic development between and within regions. Regional inequality refers to the disparity in level of development within and between various regions. Myrdal (1957) used the term "circular and cumulative causation" to refer to the phenomenon whereby the initial gaps in levels of development between the relatively more developed regions 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. The operations of the market mechanism may therefore produce the initial inequalities. Sometimes however, deliberate public policies may start the process 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 the emerging and growing inequalities in levels of development (Myrdal, 1957). Given this condition, a vicious circle is thereby created with positive feedback processes operating to produce "a virtuous upward spiral growth in the core regions and a vicious downward growth in the periphery" (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, 1968).

In a related study similar to Myrdal, Hicks and Streeten (1980) asserts that initial advantages will determine the location of growth regions. Growth is accentuated by cumulative and derived advantages. He also emphasizes flows of capital, labour and commodities between growth and lagging regions. The essential point of difference is that he maintains that those flows operate to benefit the lagging areas. Ullman's model buttresses the point that regions within a nation will grow at different rates. Growth regions will always maintain their lead position through "self generating momentum", which is due to their enjoyment of both internal and external economies of scale (Ullman, 1958).

The Growth Pole concept is well manifested in the pattern of settlements in Osun State with some having initial advantage of concentration of investments, thus becoming growth centres within the State. Since the time of colonial administration in Nigeria, Ibadan the regional capital of former Western Region and later Oyo State, had been the major growth centre attracting people and material resources for further growth while other areas lagged behind. Perhaps, it was the manifested disadvantages of the lagging areas that started the agitation for the creation of more states from the then Western Region. This brought about a spread of Government investment into such other states as Ondo, Ogun and Oyo States, which were carved out of the former Western Region.

Within Oyo State, Ibadan still maintained its position as the primate city that attracts all economic activities. However, with the creation of Osun State in 1991, there had been a change in the pattern of movement of the people and material resources. People from various LGAs now tend toward the state capital, Osogbo, for all civil matters, thus attracting other economic opportunities. This initial advantage propelled Osogbo ahead of other major towns in the State, thus creating the initial inequality, as government investments are always concentrated at the State capital. Likewise, the idea of Local Government creation was to further spread government investments to the grass-roots level, by locating the Local Government Headquarters in towns considered to be lagging in development.

The works Akpan (1992, 2000) in South-Eastern Nigeria served as a reference point to this study. He used factor analysis, multiple regressions and cluster analysis to determine pattern of development in the area. He found out that there are six factors accounting for 73% of total variance from 26 variables measured in 71 LGAs in the region. These factors were postal communications, secondary school education, cooperatives, population-size, cash crop and community development. The analysis confirmed the existence of inequality among the 71 LGAs. From the analysis three independent variables explained about 70% of total variance. These were population of LGA's headquarters, population of the LGA and Accessibility index of LGA headquarters. Accessibility index is measured as the shortest path links between the local government headquarters and other settlements within the LGA. In another smaller 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. These were Urbanization, Communication, Revenue, Education, Cooperatives, Industry and Agriculture. He established that significant differences existed in levels of development among the administrative units and that these units could be categorized into three classes as, the developed, fairly developed and the disadvantaged.

The Study Area

Osun State is located within latitudes 6^055^1 and 8^010^1 North and longitudes 3^055^1 and 5^005^1 East of South Western Nigeria. It covers a total landmass of about 7997.5484 square kilometers with an estimated population of 2,854,832 in 2001 (NPC, 1997). The breakdown of the population figures among the 30 LGAs in the state reveals that 15 LGAs have population above 100,000 and 14 others have between 50,000 and 100,000 people, while only one has population below 50,000 (Table 1).

Politically the state is divided into three senatorial districts. Each Senatorial district has ten Local Government Areas. Senatorial district one consists of Aiyedaade, Aiyedire, Ede North and South, Ejigbo, Egbedore, Irewole, Isokan, Iwo and Ola-Oluwa Local Government Areas. Senatorial district two has Boripe, Boluwaduro, Ifedayo, Ifelodun, Ila, Irepodun, Odo-Otin, Olorunda, Orolu and Osogbo. Senatorial district three consists of Atakumosa East and West, Ife Central, East, North and South, Ilesa East and West, Obokun and Oriade Local Government Areas.

Methodology

The data for this study were collected for the State's 30 Local Government areas

(LGAs).Local Government area was chosen as the unit of analysis because it is the spatial unit for social and administrative organization in Nigeria. It has been adopted by the government, in recent years, as the development planning units at the grassroots. Thus, it is the lowest spatial unit for which information on most indicators of development can be collected in Nigeria.

There are indicators that have been used in the measurement of development at micro and macro scales depending on the conceptualization of development and the focus

Table 1: Population and land Area by LGAs

	LGA Name	Pop. 1991	*Projected pop. 2001	Land$^+$ Area (km^2)	Percent Of state Land
1	Atakumosa East	38105	50370	419.62	5.25
2	Atakumosa West	60037	79362	502.01	6.28
3	Aiyedaade	94777	125285	951.37	11.90
4	Aiyedire	41636	55038	247.87	3.10
5	Boluwaduro	42392	56037	132.75	1.66
6	Boripe	82387	108907	107.07	1.34
7	Ede North	69388	91723	107.55	1.35
8	Ede South	72975	96465	183.72	2.30
9	Egbedore	40293	53263	235.44	2.94
10	Ejigbo	69366	91694	343.84	4.30
11	Ife Central	96580	127669	168.92	2.11
12	Ife East	95857	126713	164.46	2.06
13	Ife North	127677	168776	708.91	8.86
14	Ife South	88170	116551	647.32	8.09
15	Ifedayo	24671	32612	201.30	2.51
16	Ifelodun	76565	101211	110.92	1.39
17	Ila	50585	66868	190.73	2.39
18	Ilesa East	78471	103730	65.03	0.81
19	Ilesa West	60974	80601	57.51	0.72
20	Irepodun	80415	106300	54.47	0.68
21	Irewole	77884	102954	233.35	2.92
22	Isokan	56943	75272	237.02	2.96
23	Iwo	105401	139329	246.26	3.08
24	Obokun	61218	80924	464.72	5.81
25	Odo-Otin	82314	110810	260.83	3.26
26	Ola Oluwa	39454	52154	298.77	3.74
27	Olorunda	83347	110176	85.07	1.06
28	Oriade	80833	106853	447.99	5.60
29	Orolu	73042	96554	76.24	0.95
30	Osogbo	106386	140631	46.47	0.58
	State Total	2,158,143	2,854,832	7997.54	100

Source NPC 1997

*2001 Population Projection using 2.83percent Growth rate (Federal Office of Statistics,Nigeria, Rate) Computation by Macro-statistics Osun State;$^+$Digitalized map of Osun State (RECTAS)

of the researcher. For this research, data collected include all the available natural and man-made resources in each Local Government Area. The data were collected on 45 indicators of development in 2001 from all the 30 Local Government Areas, and from government ministries and agencies (see Table 2). The raw data collected from all sources were subjected to editing and processing (normalized) to avoid introducing bias among the LGAs. The data generated was analyzed using principal component analysis (PCA) and logistic regression. Mapping technique was also performed, using Geographic Information System Software, ArcView version 3.2, for spatial illustrations of some of the findings. The goal 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 (Tabachnick and Fidell, 1996). PCA has the abilities to summarize data, identify salient underlying patterns of relationship within the data set, and eliminate redundant variables and inter-correlation in the data set. It is also capable of producing groups and sample ordination in one integrated analysis (Gorsuch,1983 ; Adesina, 1994).

Logistic regression, commonly called Logit regression is used when the dependent variable (response variable) is dichotomous (i.e.binary or 0-1). The independent variables may be quantitative, categorical or a mixture of the two. The basic form of the logistic function is:

$$P = \frac{1}{1 + e^{-z}}$$

where, z is the predictor variable and e is the base of natural logarithm equal to 2.71828 and P is an estimated probability. When z the predictor variable is more than one then the z is a linear function of a set of predictor variable:

$$z = b_0 + b_1 x_1 + b_2 x_2 + \ldots \ldots B_K x_K$$

This expression is substituted for z in the formular for the logistic function above to become multivariate logistic function as:

$$P = \frac{1}{1 + e^{-(b_0 + b_1 x_1 + b_2 x_2 + \ldots \ldots B_K x_K)}}$$

All the basic properties of the logistic function are preserved as the function P still range between 0 and 1. In logistic regression all predictor variables enter the equation simultaneously and extract the significant variables which best explain the probability of the odd in the dependent variable (P) . It allows evaluation of the contribution made by each predictor over and above that of the other predictors (Retherford and Choe, 1993). In this study logistic regression model is used to examine the independent variables that best explain development inequalities among the LGAs in the state.

Results and Discussion

This section discusses the results of the data analysis. It is divided into three sections: the first presents the components of development; the second discusses the development inequalities among the LGAs; the third section gives the results of the logistic regression, which relate the development status of the LGA to the indices of development.

(a)   Components of Develement in Osun State

`The PCA extracted 13 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 eigen values are discuss in this study. Eigen value is the measure of the amount of variation accounted for by a component in a set of components identified by PCA. Component 1 accounts for **21.24** percent of the total variance, which is the most important component of development in the State. Eighteen variables loaded significantly out of 45 variables. The variables are measures of material prosperity, in terms of electricity consumption, new vehicle registration, petrol stations, large manufacturing employment and telephone facility, road density, population density and percentage urban population. Others are livestock rearing such as poultry, fishery, goat, sheep and pig, which are easily reared within urban areas in Southwestern Nigeria. Given the mixture of variables that loaded significantly on this component it is clearly an index of development for the State and it is named Urban Economic Prosperity Component (Table 2).

The second component accounts for **17** percent of the total variance with seventeen variables loading significantly in the range of **0.40** and **0.79** on this component. These are Higher Institution enrolment (v44), Nurses per 10000 population (v23), Doctors per 10000 population (v22), Higher education institution direct employment (v45), Hotel facilities per 10000 population (v30), and Post articles received or sent per 1000 population (v26). Others are Petrol station per 10000 population (v31), Secondary school enrolment per 1000 per population (v39), Hospital beds per 1000 population (v21), Banks per 10000 population (29), tarred road (v16), telephone facility (v27) and new motorcycle registration (v37). The remaining four variables loaded negatively but significantly on this component, these include primary school students / teacher ratio (v40), secondary school students /teacher ratio (v41), federal allocation (v17) and total local government expenditure (v18) as shown in Table 2. This indicates that, these four variables have no direct influence on the level of development as measured by component 2. Some modernization variables which loaded moderately on this component gives an indication of the general level of social equality which summarizes the welfare dimension associated with establishment of higher institutions in a region. For instance, apart from enrolment and direct employment benefit from such institutions, people benefit immensely from services rendered by such institutions. One of such services is access to high quality health facilities in the Teaching Hospitals commonly established for universities. However, the low score of urbanization status on this component further reveals the relative importance of establishment of higher institutions in rural areas specifically, Esa-Oke, Iree and Ila. These variables revealed that establishment of higher education institutions in various part of the State has continued to impact positively on the state development through the processes of "backwash/ polarization" and "spread/ trickledown effect" (Abiodun, 1981). Thus, component 2 is an index of higher education development in the State, which is named higher education establishment component of development.

Table 2:   Rotated Principal Component Loading 2001

Variable label	Component loadings				Communalities
	C_1	C_2	C_3	C_4	
LandV1	**-.70**	-.06	-.02	-.07	50
CocaV2	.12	.12	**.75**	.09	59
PkV3	-.03	-.09	**.58**	-.16	37
ForeV4	**-.43**	-.07	.09	-.06	21
CattV5	**.48**	-.12	**.40**	-.06	41
GoatV6	**.90**	.19	-.09	-.27	92
PigV7	**.77**	.27	-.13	-.10	69
ShepV8	**.86**	.12	.11	-.32	86
BirdV9	**.89**	.29	-.02	-.13	89
PondV10	**.81**	.13	-.008	-.02	68
FishV11	**.79**	.08	-.006	-.03	63
WatV12	.29	.04	.07	**-.43**	28
BoreV13	-.28	-.34	-.19	.31	35
ElectV14	**.68**	.07	-.05	-.10	48
RoadV15	**.59**	-.17	.18	.29	50
TardV16	.36	**.49**	-.34	-.12	50
FdaloV17	-.09	**-.56**	**-.44**	**.48**	74
TexpV18	-.16	**-.51**	-.38	**.54**	72
IgrV19	.05	.02	**.48**	.19	27
HfacV20	-.11	.19	-.12	**.81**	72
HbedV21	.39	**.61**	.08	.25	60
DocV22	.31	**.76**	.22	.21	77
NurV23	.38	**.79**	.14	.17	82
PostV24	-.19	-.26	**-.49**	**.47**	57
PosagV25	-.06	-.10	.19	**.64**	45
PoartV26	-.05	**.73**	-.29	-.09	63
TeleV27	**.63**	**.62**	.25	.15	88
CoopV28	.09	.18	.01	.23	10
BankV29	.24	**.51**	-.13	.36	46
HotelV30	**.47**	**.74**	.14	.09	79
PetrolV31	**.41**	**.65**	.34	.02	71
CsemV32	.29	.26	-.39	.31	39
MaesV33	-.15	.10	**.62**	-.04	42
LmemV34	**.43**	.31	-.06	.13	30
SmemV35	-.17	.11	**.61**	-.03	41
NvregV36	**.51**	.25	.11	.24	39
CyregV37	.27	**.40**	-.02	-.12	25
PrerV38	.001	.30	.38	**.65**	65
SecenV39	.39	**.62**	**.42**	.23	77
PrstV40	-.05	**-.56**	-.14	.15	35
SestV41	.07	**-.53**	-.03	-.06	29
PodenV42	**.91**	.16	.05	-.28	94
UrbV43	**.60**	.39	.20	-.34	68
HienrV44	-.05	**.52**	**-.49**	-.14	54
HistafV45	-.13	**.75**	-.39	-.06	72
Eigen Value	9.56	7.65	4.22	3.74	
%Total Variance	21.24	16.99	9.38	8.31	
Cum.% Total Variance	21.24	38.23	47.61	55.92	

Component 3 contributes **9** percent of the total variance with eigen values of **4.22** . Ten variables loaded highly on this component which include cocoa production (v2), manufacturing establishment (v33), small scale manufacturing employment (v35), palmkernel production (v3), internally generated revenue (v19) and cattle rearing (v5). Others are post office (v24), higher education enrolment (V44), secondary school enrolment (v39) and federal allocation (v17), which loaded negatively on component 3. These variables shows that agricultural produce and small scale manufacturing employment are important aspect of development in the State, thus component 3 is named as agricultural produce/ small scale employment component of development.

Component 4, which accounts for 8 percent of the total variance with eigen value of 3.74 has seven variables that loaded highly on it. These variables are health facilities (v20), primary school enrolment (v38), postal agency (v25), total LGA expenditure (v18), federal allocation (V17), post office (v24) and water provision (V12). The mixture of these variables shows that infrastructural development especially in the rural areas is also important in the development process of the State. One thing to note about this component is that the first three variables that loaded highly are variables that are well distributed in the rural LGAs in the State. Thus, this component is named infrastructural component of development. The results shows that regional development in Osun State can best be described in terms of these four components.

(b)   Development Inequalities

Based on the four components extracted from the results, variations in levels of development among the Local Government Areas are discussed. The distribution of components scores among the LGAs provided the means of identifying the spatial variation in levels of development (Table 3). The component scores are also used as input into the GIS mapping technique.

i)   Variations in Levels of Development on Component One

On the first component, 14 out of 30 Local Government Areas have positive scores. Osogbo has the highests score of 3.33, followed by Olorunda, Ilesa West and East, and Irepodun Local Government Areas are other LGAs that scored above 1 ranging between 1.2 for Ilesa East and 1.5 for Irepodun. The remaining nine Local Government Areas in this group scored below 1. Sixteen Local Government Areas scored negatively on this component. These are depicted in Figure 1. Aiyedaade, Ife South and Ife North LGAs have the lowest scores on this component. One conclusion that can   be drawn from this is that the forces of polarization or backwash as contained in the Growth Pole theory is in operation and perhaps stronger than trickledown or spread effect in the State. It also reflects the process of cumulative – causation where by investment in a Growth centre tends to induce other investments in the centre at the expense of the surrounding areas as human and material resources continue to drift to the developed centres. This process is strengthened by the differential sectoral investment of the State Government in favour of the major urban centres.

Table 3:   **Distribution of Component Scores by LGA 2001**

LGA	C_1	C_2	C_3	C_4
Atakunmosa East	-.51	-.69	-.32	1.32
Atakunmosa West	-.85	-.33	.45	-.38
Ayedaade	-1.31	.25	.39	-1.04
Ayedire	-.21	-.0003	-.86	.35
Boluwaduro	.03	-1.06	-.55	1.32
Boripe	.29	.38	-.62	-1.22
Ede North	.82	.30	-.25	-.35
Ede South	-.25	-.64	.47	-.39
Egbedore	-.31	-.69	-.30	.58
Ejigbo	.34	-.46	.41	.53
Ife Central	.80	3.83	-.1.80	-.26
Ife East	.21	-1.02	3.32	-.92
Ife North	-1.13	-.30	.14	-1.45
Ife south	-1.18	-.23	.33	-.17
Ifedayo	-.09	-1.35	-1.19	1.89
Ifelodun	.57	.15	.60	-.62
Ila	.01	.11	-.55	.89
Ilesa East	1.18	-.35	1.39	.04
Ilesa West	1.48	1.47	-.76	.46
Irepodun	1.52	-1.30	-.53	-1.60
Irewole	-.85	.17	.89	-.77
Isokan	-.81	-.13	1.22	-.22
Iwo	-.33	.40	.47	-.96
Obokun	-.65	.38	-1.15	.68
OdoOtin	-.11	-.63	-.41	.36
OlaOluwa	-.77	-.67	.51	.22
Olorunda	1.48	.88	-1.42	1.49
Oriade	-.72	.54	-.30	.54
Orolu	.76	-1.46	-.19	-1.18
Osogbo	3.22	.48	-.35	-.46
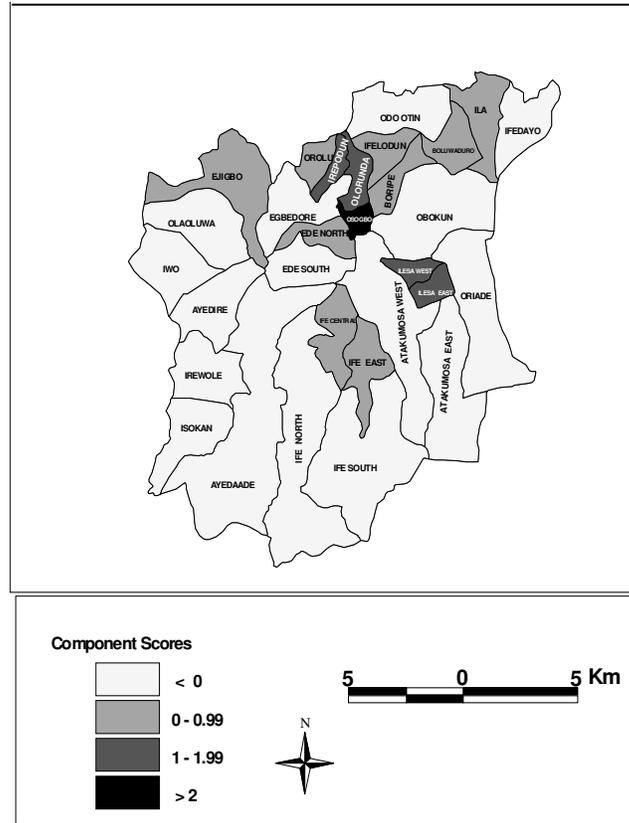
Figure 1 Variation in Levels of Development on Component One
(Urban Economic Prosperity

ii)   Variations in Levels of Development on Component Two

Spatial inequality in development among the LGAs is also indicated in Component 2. Higher Education institutions obviously have significant influence on the scoring of each LGAs. Consequently, Local Government Areas with one type of higher institution or the other scored highly on this component. As expected, Ife Central LGA that houses one of the first generation universities in the country, takes the lead with a score of 3.83. Ilesa West followed it with a score of 1.47. Eleven others also scored positively on this component, with scores ranging between 0.1 and 0.88. The LGAs with the lower score in this group are Osogbo, Olorunda, Ede North, Boripe, Irewole, Obokun, Iwo, Oriade, Ifelodun, Irepodun and Ila. The remaining seventeen LGAs scored negatively on this component (Figure 2).

iii)   Variations in Levels of Development on Component Three

Going by the PCA loadings, Component three was named agricultural produce and small-scale industrial employment component. Thirteen LGAs have positive scores on the component. Ife East LGA has the highest with a score of 3.32. Ilesa East and Isokan LGAs follow this with 1.39 and 1.22 respectively. The remaining 10 LGAs had

34

scores that were less than 1. Their scores ranged between 0.14 in Ife North LGA and 0.89 in Irewole LGA (Figure 3).

iv) **Variations in Levels of Development on Component Four**

Fourteen LGAs had positive scores in this component. Four of the fourteen had more than scores of 1. These include Ifedayo, Olorunda, Atakumosa East and Boluwaduro LGAs. Three of these four are rural LGAs while Olorunda is the only urban LGA in the group. The remaining ten LGAs scored below 1 ranging between 0.04 in Ilesa East LGA and 0.89 in Ila LGA. Sixteen LGAs scored negatively on the component (Figure 4). The high scores recorded by Ifedayo, Atakunmosa East and Boluwaduro are related to the high number of primary health facilities and high primary school enrolments in the areas.

One inference that one can draw from these results is that development inequalities prevail among the Local Government Areas in the State. This requires that policy options be tailored to address spatial inequality in such a way as to invigorate development processes in the various parts of the state.

(c) **Predictor Variables for Development**

In this section the logistic regression model is used to examine the predictor variables that best explain the variation in levels of development among the LGAs. The dependent variable for each observation in the study is the LGAs/Location, which takes the value of 1 if the LGA is urban, or 0 if it is rural. The independent variables are the 45 variables in the data set. The logistic regression was performed using STATA version 7.0 a software package for statistical analysis, it has the ability of isolating the significant variables from a set of independent variables.

Table 4 shows the results of the logistic regression. The model accepted 24 out of the 45 variables as significant predictor variables of development in the State. The odds ratios, Z and P>Z values, which gave indications about the strength of each of the variables in the model, are also shown in Table 4. Out of the 24 variables brought into the model, only six are significant as predictor variables to explain the variations in levels of development among the LGAs in the State. These are higher institution enrolment (hienr), postal articles received or sent (partiv), local government expenditure (expv), federal allocation (fdalo), primary school enrolment (prerv) and population density (podenv). The most significant of the six variables identified is Higher education institution. This should be expected as higher institutions tend to maintain a strong "pulling" influence on development features such as commerce, estate development and vehicular concentrations through polarization/ backwash processes. It also tends to contribute to the development of the surrounding hinterland through the processes of spread or trickle down effect. Apart from establishment of higher education institution, the fiscal system of revenue allocation among the LGAs from the federation account and the expenditure pattern at the local government level also affect government investment on developmental projects that can be executed at the local levels.
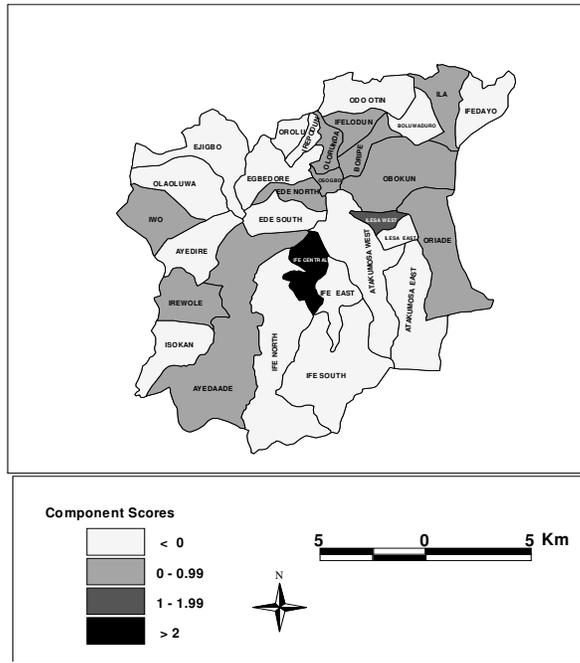
Figure 2 Variation in Levels of Development on component Two
(Higher Education Establishment)
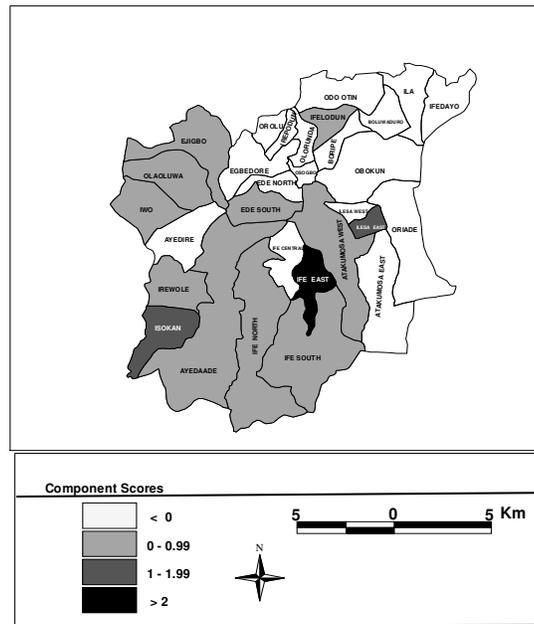
Figure 3 Variation in levels of development on Component Three
(Agricultural Produce/Small Scale Employment)

Figure 4 Variation in levels of development on Component Four
(Infrastructure)

Table 4 Logistic Regression result

Logit estimates

Number of obs =	30				
LR chi2 (24)	= 27.55				
Prob > chi2	= 0.2793				
Log likelihood = -2.289e-07	Pseudo R2	= 1.0000			

Class	Odds Ratio	Std.Err	Z	P >[z]	[95% Conf. Interval]	
Forv4	.0963172	.	.	.	.	.
Catv5	1.089897	.	.	.	.	.
Goatv6	3.414946	.	.	.	.	.
Pigsv7	1.015813	.	.	.	.	.
Sheepv8	.177941	.	.	.	.	.
Birdv9	1.163514	.	.	.	.	.
Watv12	.3091181	.	.	.	.	.
Borev13	.0423972	.	.	.	.	.
Electv14	1.05895	.	.	.	.	.
Tarv16	.0286953	.	.	.	.	.
Expv18	1.006996	7.540022	0.00	0.999	4.26e-07	2379680
Igrv19	.8499984	.	.	.	.	.
Partiv26	1.035604	.6125265	0.06	0.953	.324889	3.30105
Coopv28	.9317405	.	.	.	.	.
Podenv45	.9443884	4.800448	-0.01	0.991	.0000445	20040.92
Urbv	1.398071	.	.	.	.	.
Fdalov17	.9641473	6.381064	-0.01	0.996	2.24e-06	414660.5
Prerv37	.8552078	20.81564	-0.01	0.995	1.64e-21	4.47e+20
Serv39	.6188023	.	.	.	.	.
Prstv41	4.867516	.	.	.	.	.
Sestv43	.5271308	.	.	.	.	.
Hienr	1.008306	.3037317	0.03	0.978	.5587086	1.819699
Histaf	.8672551	.	.	.	.	.
Discap	.5756546	.	.	.	.	.

The fiscal system of State Government investment in different sectors tends to favour some LGAs at the expense of the others and this also contributes to the level of inequality among the LGAs. The results of the logistic regression therefore revealed that the development surface in Osun State is significantly influenced by six variables among the predictor variables.

Conclusion and Recommendation

The findings in this research have confirmed the existence of inequality of Development in the state in which many development indicators are concentrated in a few Local Government Areas that are urban based, while the majority (24 LGAs) are lagging behind on the components of development. This portends serious implications for development planning in the state. First, one can conclude that the economy of the entire state is portrayed as being largely underdeveloped. Two, inequality in the distribution of the essential facilities and services have resulted in impaired growth of the economy, which is manifested in the under-utilization of human and natural resources in the state. Thirdly, the urbanization process, which is a rational human solution to readjust in relation to the prevailing situation of unbalanced distribution of benefits, may further result in stifling of growth in the deprived areas, which will further impoverish the inhabitants. While the undue congestion in the favoured areas might be countered productive with negative consequences, the observable out-migration from the rural areas is a demonstration of this spontaneous adjustment.

Spatial disparities in levels of development as revealed in this study can be redressed by planned action. To break the circle of poverty in Osun state and other states of Nigeria and to move into long-term sustainable development will require the government to provide enabling environment for the productive use of resources (see Mbaku, 1997, World Bank 1981). This will involve the emergence of a spatial system that allowed natural resources from rural regions to be used productively within those regions; facilitate the dissemination of innovation and the delivery of public and commercial services; aid in the efficient production and exchange of goods throughout the state and national economy, and draw larger numbers of the population into productive economic activities. This is crucial for a wide spread of sustainable development and to reduce poverty.

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