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## **A Geographical Analysis of the Economic Base of Settlements in Ondo Region in Ondo State of Nigeria**

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### **ABSTRACT**

Traditionally, the economic base model is a tool used by economist to determine the economic development path of a community or predict the future employment requirement of a firm. In the recent time, however, urban geographers have started to employ the model to the very understanding of the inner workings of cities in relationship to its intended hierarchy's functions for proper urban planning. This study interprets the central place model of Ondo region in Ondo State, Nigeria with the economic base model of the region for regional planning purposes. Therefore, the paper provides a cultural and economic bases of the region. An integration of both primary and secondary sourced data were employed in the study, while settlements in the area were ranked based on the numbers of functions they offered. The location quotient was used for the identification of the basic sectors and non-basic sectors. Results from the study show that the study area has low economic growth in spite of available potential indices for development, the distribution of the basic sectors along the central place ranking is haphazard – there is no positive correlation between the basic sector and the central ranking, and the existence of great spatial disparity in economic activities and services offered by the settlements in the region. Be that as it may, since there are indications that most of the settlements have the potentialities for development but for lack of adequate infrastructures, it is, therefore, advanced that the government, corporate agencies, individuals, and communal efforts be harnessed to provide good roads, safe water, health facilities, regular power supply, security, etc., to the settlements to facilitate the expected development.

**Keywords:** Economic base, Geographical analysis, Ondo Region, Settlements.

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### **I. INTRODUCTION**

The economic base model is a tool traditionally used by the economists to determine the economic development paths of a community or to predict the future employment required of a firm (Abiodun, 1967).

Urban geographers in the recent times have started to look at how the model could be useful in understanding the inner workings of cities in relation to its internal functions hierarchies for proper urban planning. Others have used the model to study the history of the emergence of cities in a continent, subcontinent or in a country so as to predict the pattern of the emergence of cities in the future. Most recently, the third group of geographers are those who use the economic base model for the purposes of regional planning. That is, they are involved in the integration of the central place theory in a region with the internal economic base model. Separate ranking was provided for each analysis which allows for comparison.

Comparison of the two rankings is premised upon the hypothesis that perfectly underdeveloped region will exhibit in perfectly negative correlation between the two rankings and conversely. A perfect positive correlation indicates a perfectly developed region. In between these utopian extremes are gaps in the two rankings. The gaps are the clue to what strategies to be adopted in the planning.

Ondo region comprises two Local Government Areas (LGAs) – Ondo East and Ondo West Local Government Areas. It is purely an administrative region. There are twenty wards in the region with eighteen basic sectors. The basic sectors neither increase along the central place ranging in the region; rather the distribution of the basic sector along the central place ranging was random. This indicates inequality in the distribution of social and economic activities in Ondo region. The mismatch between the ranking of the two variables provides the clue for the strategies to be adopted in the planning of the region.

This study aims at integrating the central place model with the economic base model of Ondo region for the purposes of regional planning. Therefore, the study sets to: identify the basic sector for each settlement using the location quotient method; rank the settlement based on the value of their location quotient; produce a central place ranking of the settlements; integrate the economic base ranking with the central place ranking; using the integration or model to determine the developmental opportunities and deficiencies of the settlements; and to use the gaps based on findings as recommendations for regional planning of the area.

Theoretical framework provides the foundation upon which a research structure is laid, helps the researcher to study in a number of ways, guide him in hypothesis generation and to determining the type of data to be generated. In other words, theoretical framework is the foundation from which all knowledge is constructed (metaphorically and literally) for a research study. It serves as the structure and support for the rationale for the study, the problem statement, the purpose, the significance, and the research questions. The theoretical frame work provides a grounding base, or an anchor, for the literature review and most importantly, the methods and analysis. Therefore, without a theoretical framework, the structure and vision for a study is unclear, much like a house that cannot be constructed without a blueprint. By contrast, a research plan that contains a theoretical framework allows the dissertation study to be strong and structured with an organized flow from one chapter to the next (Lysaght, 2011; Grant and Osanloo, 2014).

Two theoretical applications are relevant in this study. The first is the central place model which provides insight into size, distribution and functional importance of settlements in the region while the second is the economic base model which provides an explanation of the nature of economic activities in Ondo region. The two models were integrated to provide answers to the problems of social and economic development in the region.

The Central Place Theory is a universal model for geographers and planners. It provides the size, number distribution and functional importance of settlements in a hierarchical, step-like ordering of settlements in a region mainly for the purposes of spatial location and allocation of resources and other uses for administrative and regional planning purposes. Crucial to the central place theory are concept such as threshold population, range of goods and services (Ayeni, 1980); Omuter and Onakuhoraye, 1986). The economic base model is a tool for a first approximate in the prediction of the impacts of new economic activity in cities and regions (Abiodun, 1968; Curtis, et. al. 2010).

Though, the model has its root in the 16<sup>th</sup> century mercantilist economy, it was popularized by Albert Murray Haig in 1928 in his work “The economic bases of New York.” It is an analytical tool that divides the economy of a region into two: the basic sector and the non-basic sector, and then calculated a base multiplier to determine the impact of the basic sector of the regional economy. (Planning methods Glossary of Terms, 2009). The basic sector also known variously as the basic employment, economic base, or the ‘export’ sector of the regional economy is the engine, the power-house that drives the economy of a region. The stronger the basic sectors of a region the stronger the economy of such region. The basic sector is made of economic activities that are entirely dependent on factors that are external to the region because the basic sector is export oriented (Robertson, 2003).

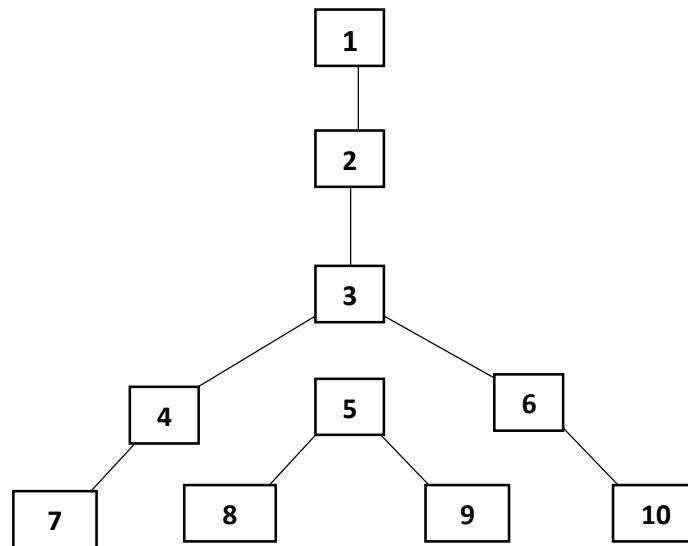
At the local level, therefore, agriculture manufacturing services, forestry, fishing, mining that are export oriented are in the basic sector because they bring income from places outside the region for the same reason, all incomes that come into the region in form of pension, gratuity, transfer payment resident communicating to work outside the region, tourism, employment in federal and state agencies (depending on the size of the region) are all part of the basic sector. Precisely, the theory assures that the economic fortune of any region depends on the premises that such income has multiplier effects on local or domestic economy also known as the non-basic sector by offering employment and services (Schaffer, 1989).

The non-basic sector is the domestic economy of the region that provides support services to the basic sector. The non-basic sector consists all economic activities for domestic consumption, or use. It includes food, construction, and local industries entertainment. The non-basic sector is entirely depended on local economic conditions. It can only grow when the basic sector is strong. The fundamental concept in the economic base model are: employment multiplier; base period, base year, launch year, and location quotient (Robertson, 2003).

## **2. METHODOLOGY**

The integration of various data source was used in this study. This to Ogundele (2006) is “multiple of the method of data collection” which he opined leads to easy resolution of research problems. Both primary and secondary data were sourced and used in the study. The primary sourced data are in two forms; questionnaire for the identification of functions offered by settlement for the central place analysis and questionnaire for the identification of the employment structure of the people for the identification of the basic sectors in the sampled settlement. The Secondary sourced data included maps showing the distribution of geographical features of the study area settlement, transport route, infrastructural facilities etc. The whole region formed the target population. However, ten settlements were used for the study. The ten settlements were chosen by stratified random sampling techniques as to enable at least one settlement to represent every of the five settlements hierarchies identified in the central place analysis.

Data obtained on the employment structure were based on the seven major economic activities in the region viz: Agriculture, Retail, Services, Transportation, Forestry, Government and Manufacturing for the central analysis, Settlement in this study area were ranked based on the number of functions they offered. Five settlement hierarchies were identified.



**Fig: Ten Settlements Chosen By Stratified Random Sampling Techniques**

For spatial spread, the ten settlements were chosen randomly from the five hierarchies as shown in the fig. 1 above. The settlements are Ondo, Bolorunduro, Igba, Bagbe, Oboto, Igunshin, Fagbo, Laje, Igbindo and Epe. While the location Quotient technique was used for the identification of the basic sectors. Location Quotient (LQ) is a statistical method for classifying the economy of a region into basic and non-basic sectors. It is the employment ratio of an economic sector in a region in relation to the same sector in a larger economy, usually the national economy (depending on the scale of study). The Location Quotient has the following equation:

$$LQ_{ij} = \frac{E_{ij}/e_{aj}}{E_{ia}/E_{aa}}$$

Where:  $i = 1, \dots, n$ ;  $j = 1, \dots, m$ ; and  
 $e_{ij}$  = local employment in industry  $i$  and place  $j$   
 $e_{aj}$  = local location employment in place  $j$   
 $e_{ia}$  = region wide employment in industry  $i$   
 $e_{aa}$  = region wide employment in all industries

For simplification the equation can be represented as:

$$LQ = \frac{\% \text{ of local employment in sector A}}{\% \text{ of national employment in sector A}}$$

A Sector is basic if  $LQ \geq 1$ , i.e. if  $LQ$  is equal to or greater than 1 and non-basic if  $LQ < 1$ .

### 3. ANALYSIS AND DISCUSSION OF RESULTS.

**Table 1: Percentage contribution of each of the sector to Benchmark (Igeru) economy in 2015**

S/N	Economic Sector	Contribution to national Economy in 20
1.	Agriculture	52
2.	Retail	07
3	Services	05
4	Transportation	04
5	Government	03
6	Manufacturing	10
7	Forestry	01

**Table 2. Basic sector analysis**

S/N	SETTLEMENT	AGRICULTURE (52%) $LQ = (e_i)(e)$ (Ei/E)	RETAIL (7%) $LQ = (e_i)(e)$ (Ei/E)	TRANSPORTATION (4%) $LQ = (e_i)(e)$ (Ei/E)	SERVICES (5%) $LQ = (e_i)(e)$ (Ei/E)	FORESTRY (1%) $LQ = (e_i)(e)$ (Ei/E)	GOVERNMENT (3%) $LQ = (e_i)(e)$ (Ei/E)	MANUFACTURING (10%) $LQ = (e_i)(e)$ (Ei/E)	NO OF BASIC SECTOR $LQ = (e_i)(e)$ (Ei/E)
1	Ondo City	0.01	12.1	14.5	8.0	0.1	13.1	1.2	5
2	Igbindo	2.4	3.0	1.2	4.8	1.4	1.5	0.4	6
3	Laje	1.8	5.6	2.1	3.2	1.2	4.7	0.6	6
4	Bagbe	1.9	1.2	1.4	2.5	0.68	3.9	0.1	5
5	Igunsi	2.0	4.0	0.4	3.6	0.8	1.6	0.4	4
6	Bolorunduro	0.04	3.0	8.0	3.9	1.0	3.3	0.6	5
7	Igba	0.81	6.1	0.5	2.2	0.1	0.4	0.5	2
8	Obato	1.9	1.8	0.2	5.1	4.3	3.1	0.1	5
9	Fagbo	1.2	4.0	0.8	3.1	6.4	1.1	0.4	5
10	Epe	1.8	1.5	6.1	2.4	5.3	1.2	0.4	6

**Table 3. Settlements and basic sectors**

S/N	Settlement	Basic Sector	No of Basic Sector
1	Ondo City	Retail, Services, Transportation, Government, Manufacturing.	5
2	Igbindo	Agriculture, Retail, Services, Transportation, Forestry, Government.	6
3	Laje	Agriculture, Retail, Services, Transportation, Forestry, Government.	6
4	Bagbe	Agriculture, Retail, Services, Government.	4
5	Igunsi	Agriculture, Retail, Services, Government.	4
6	Bolorunduro	Retail, Services, Transportation, Forestry, Government.	5
7	Igba	Retail, Services.	2
8	Oboto	Agriculture, Retail, Services, Forestry, Government.	5
9	Fagbo	Agriculture, Retail, Services, Forestry, Government.	5
10	Epe	Agriculture, Retail, Services, Transportation, Forestry, Government.	6

**Table 4. Hypothetical ranking of the variables**

S/N	Basic	Central place
1	1 <sup>ST</sup>	1 <sup>ST</sup>
2	2 <sup>ND</sup>	2 <sup>ND</sup>
3	3 <sup>RD</sup>	3 <sup>RD</sup>
4	4 <sup>TH</sup>	4 <sup>TH</sup>
5	5 <sup>TH</sup>	5 <sup>TH</sup>

**Table 5. Observed ranking of the variables**

S/N	Settlement	Number of sector	Basic Sector Ranking	Central Place Ranking
1	Ondo City	5	2 <sup>nd</sup>	1 <sup>st</sup>
2	Bolorunduro	5	2 <sup>nd</sup>	2 <sup>nd</sup>
3	Igba	2	4 <sup>th</sup>	3 <sup>rd</sup>
4	Bagbe	6	1 <sup>st</sup>	4 <sup>th</sup>
5	Obato	5	2 <sup>nd</sup>	4 <sup>th</sup>
6	Igunshin	4	3 <sup>rd</sup>	4 <sup>th</sup>
7	Fagbo	5	2 <sup>nd</sup>	4 <sup>th</sup>
8	Laje	6	1 <sup>st</sup>	5 <sup>th</sup>
9	Igbindo	6	1 <sup>st</sup>	5 <sup>th</sup>
10	Epe	6	1 <sup>st</sup>	5 <sup>th</sup>

Results from the study indicate that there are 49 basic sectors in Ondo region in 2020 (See Table 2). The mean basic is 4.9 while the mean Location Quotient (LQ) was 2.9 with a range of 14.1. Both figures indicate that the study area has economic growth potentials but are not actually growing resulting from inadequate basic infrastructures that could enhance development. Economic development can only be rapid with a high mean basic sector and a low LQ range. For instance, Ondo city has potentials for development in case efficient social amenities are provided.

Furthermore, there is no positive correlation between the basic sector and the central place rankings. The distribution of the basic sectors along the central place ranking is haphazard (see Table 5). Igbindo, Epe and Laje with six other basic sectors, each respectively ranked 1<sup>st</sup> and 5<sup>th</sup> in the basic sector and central place rankings. These settlements have great potentials for development but lack the infrastructure for actualizing it. The wide gap in the rankings is an indication of serious disparity economic activities and services offered by each of the settlements. Ondo city that ranked 1<sup>st</sup> in the central place has five basic sectors and ranked 2<sup>nd</sup> on the scale. This is termed anomaly as it ought to rank 1<sup>st</sup> on the basic scale but for its economy that is weak resulting from low activities in manufacturing and agriculture.

#### **4. RECOMMENDATIONS**

Obviously, many of the settlements in the region have what it takes to develop but for the absence of basic infrastructure, they are not actually developing at the expected levels. Consequently, this paper hereby advocates that government, individuals' agencies and commercial efforts be harnessed to provide good roads, safe water, health facilities and regular power supply to the settlements to enable them experience desirable development.

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