THE CENTRALITY BASED HIERARCHY OF RURAL SETTLEMENT OF TGIRIA BLOCK, CUTTACK,ODISHA

Geography

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ABSTRACT

Finding out the hierarchy of settlement is considered as an important step for providing balanced regional development to any area. The present study focuses on the identification of settlement hierarchy on the basis of threshold of function and to analyse the relationship between population and centrality score of rural service centers for achieving balanced regional development.

KEYWORDS

INTRODUCTION

Human settlements vary in functions and may be accordingly classified into successive grades ranging from a small hamlet to a megalopolis. Every settlement performs certain functions which are manifested through the activities of its residents. The rural settlements generally perform primary function and the urban settlements perform secondary and tertiary functions. Every settlement rural or urban may be act as a focus located in such a point where it associates with the surrounding area is called as a central place. A central place may be defined as a focus of manifold human activities serving the surrounding area.

In the field of regional planning, an important aspect of the study comprises the identification of settlements as the "service center" for their respective environment. A service center is a center which provides goods and services to their zone of influence.

The study of service center is well accommodated within the central place theory, which in turn emphasizes the need for hierarchical classification of service centers. It is needless to point out such studies abound in the literature of urban geography and apparently are accepted as a legitimate part in the field of the regional planning.

The term central place is synonym of service center, has been first time used to connect a center of manifold activities to the surrounding countryside. Service center can be expressed qualitatively, such as ,low and high service center, as well as quantitative by service value , which are obtained by converting the functional base of a place score on basis of frequency and importance of the function. There has been a concern among the geographers to establish a precise relationship between the size of settlement in terms of population and the range of services which it offers. The service center depends upon the intensity of the central functions. The functions or services which an urban settlements perform is not merely for itself, but primarily for the surrounding area which is dependent for many socio-economic needs on the service center.

STUDY AREA

Tigiria block is one of the developing block of the Cuttack district. It is situated 50 km away from Cuttack town. It is surrounded by Dhenkanal district in the north, Banki-Dampada block in south, Athagada block in east , and Badamba block in west. It is extending over an area of 101.33sq km , and occupies 2.57% of the district. The river Mahanadi flowing just south of this block. This block has 49 villages, and one census town. Out of the 49 villages 47 are inhabitated. The block has population of 74639 and it has population density of 736, and the rate of literacy is81.9%. It receives an average rainfall of 1402mm. The soil of this block is reddish brown and grey colour . The people of Tigiria block is largely depends upon agriculture and household industry weaving handloom sarees.

OBJECTIVE

The present investigation aims to analyse the spatial distribution of service centers their relationship to area, population inhabited villages, and net sown area and study the role of service centers in levels of development of the study region.

DATABASE AND METHDOLOGY

The entire work is based on the intensive field work supplemented by secondary sources. The questionnaire and interview technique also have been used to collect some of the information. The mean threshold population technique has been used to find out the weightage value to study the levels of development.

Most of the scholars agree that the size of population alone is not a satisfactory determinant of centrality. They emphasize the need for an index derived from the range of central functions presenting almost all urban centers. Walter Christaller has made use of an extra (region serving) number of telephone connections existing at the centers for determining the centrality of the service centers in South Germany. Goodland has worked out the centrality of Swidishs settlements, on the basis of capacity for service and trade in urban settlements. He has used the total population in a settlements and number of persons employed in retail trade and service.

The present study is worked out by the mean threshold population technique to obtain weightage for different functions and facilities.

Formula for mean threshold is

$P_i = N \quad P_{ij} / N$

Where $= P_i =$ The mean threshold population

$P_{ij} =$ The population of the Jth settlement having ith function.

$N =$ It is the number of ith functional units establishment present in the sample settlement taken for study.

The weightage of the ith function is calculated as

$W_i =$ mean threshold population of the ith unit / : Lowest mean population occurred the series

$W_i = P_i / P$

Table-1 Weightage Value of the Amenities

No. Sl. No.	Amenities	Weightage value	Sl. No.	Amenities	Weightage value
1	Education		C	Tube-well	1.23
A	Primary School	1.00	D	Hand Pump	1.12
B	Minor School	1.59	4	Post & Telegraph	
C	High School	2.11	A	Post Office	2.39
D	College	2.70	B	Post & Telegraph Office	3.23
2	Health		C	Phone Connection	2.31
A	Hospital & Dispensary	1.98	5	Communication	
B	PHC & PHS	1.76	A	Bus facility	1.20
C	MCW & Other	2.92	6	Bank	2.47
D	Health Center	3.59	7	Power Supply	
3	Drinking Water		A	Domestic	1.20

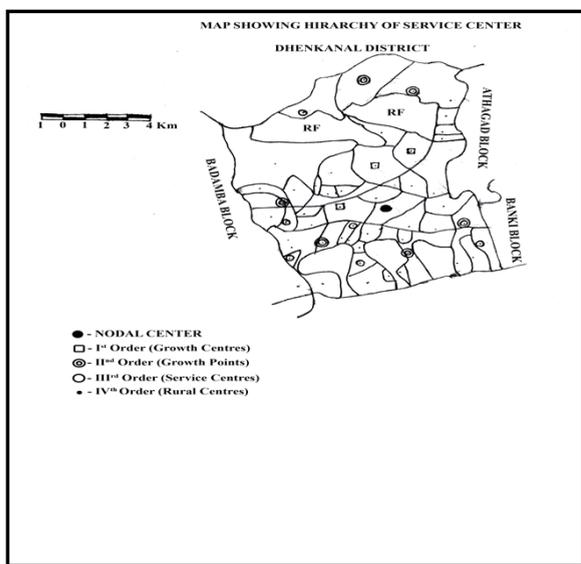| A	Well	1.12	B	Agriculture	1.62
B	Tank	1.12			

Here the analysis has been made on the basis of basic functions considering from a micro-level i.e. village level for the village, the census of India has classified the functions what are the basic needs. The important functions consider here are, Education, Medical facilities, Drinking water, Post & Telegraph office, Communication, Power supply, Bank etc.

For the development of rural areas it is necessary to provide service and other facilities there, but providing all type of services to every settlement is not possible. Thus, these services may be provide through service centers. The service centers are functionally organised in a nesting pattern and arranged in such a manner that lower order centers occur within the influence areas of higher order service centers. The higher order centers occur at the greater distance than the lower order centers. It is therefore necessary to identify these centers.

Table-2s

Sl No.	Hierarchical order	No. of Settlement	Class interval	% of Settlement
1	Nodal Center	1	21.79 – 26.18	2.12
2	Growth Center	3	17.41 – 21.78	6.38
3	Growth Point	6	13.03 – 17.40	12.76
4	Service Center	6	8.63 – 13.01	12.76
5	Rural Center	31	4.24 – 8.62	65.95

On the basis of above table - development poles and service centers have been found out . MAP

MAP SHOWING HIRARCHY OF SERVICE CENTER
DHENKANAL DISTRICT

● - NODAL CENTER
□ - Iˢᵗ Order (Growth Centres)
◉ - IIⁿᵈ Order (Growth Points)
○ - IIIʳᵈ Order (Service Centres)
• - IVᵗʰ Order (Rural Centres)

Nodal center
In Tigiria Block, Nizigarha is considering as Nodal center. As this village has some specialized function, such as Education, Health, Communication, Drinking water, etc. There are number of government offices located in this area, such as Block office, court, police station

etc. Due to its strategic location this area is the Nodal center.

Growth center
Growth centers are the important settlements in the state. In this block, there are 3 (three) such centers are find out .These Growth center generally serve the people of nodal center, this area is also called as hinterland. All these places provide higher secondary school, Post and Telegraph office, Primary health centers etc. are called as Growth center. The general population of these centers is above 5000.

Growth point
The second order centers of Growth points have a lower order of facilities than Growth centers. The important functions in these centers are High school, PHS, Post office, etc. There are only 6 such points are located in this Block. The average population size of these centers generally varies from 2000 to 4000.

Service centers
The third order centers mostly consists of the services of the lower order like minor school, Post office, Bus stand, Drinking water facilities etc. Though most of the services rendered by these settlements are for local and neighboring clusters yet even these types of facilities are not found all the centers. The general population of these centers varies from 900 to 2000. There are all about six such centers found in this block.

Rural centers
At the lowest tier in the hierarchy of the settlements are rural centers with services like Primary school, Drinking water facilities, Electricity supply to some villages etc. These settlements are totally dependent upon the higher order settlements. There are 31 villages are coming in this Rural centers.

Conclusion
The study of service centers offers a new perspective for regional rural development. It allows for a regional approach, which takes into consideration the spatial dimension of development. The service activities on ideal sense are desired to locate throughout a region to provide convenient access to the populations they are designed to serve. The nature of programme of service centers is required to be sufficiently flexible as to meet the needs of the local population.

The main aim of the study is to ensure that all the villages in the block are connected to a well linked hierarchical system. In this hierarchical system the higher service order centers provide function in addition to what the lower order service centers have. The function which are unique to the higher order service centers have a wide range than those which are common to both the higher order and lower order centerss.

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