CHAPTER – VIII
CENTRAL PLACES AND REGIONAL PLANNING

8.1 Introduction
8.2 Role of Present Hierarchy of Central Places in Regional Development
8.3 Identification of Growth Centers
8.4 Planning for Service Centers
8.5 Identification of Functional Gap
8.6 Spatial Analysis of Functional Gaps
CHAPTER – VIII
CENTRAL PLACES AND REGIONAL PLANNING

8.1 Introduction:-

The Central Place Theory, concerned with the way that settlements evolve and are spaced out. Christaller envisaged an isotropic plain with an even distribution of purchasing power. Travel costs were the same in any direction and all parts of the plain were served by a central place, so that the spheres of influence of the central places completely filled the plain. Central goods and services were to be purchased from the nearest central place and no excess profit was to be made by any central place. Christaller contended that each central place should have a hexagonal market area since this polygon represents the most effective packing of the plain and is most nearly circular.

The Central Place Theory explains how a spatial system develops to serve most efficiently a dispersed population involved in primary activities. The model is developed to show the behavior of consumers in the uniformly distributed population with equal purchasing power. In such conditions, Christaller proposed that in choosing between central places, the villagers would always choose the closest place offering the required good or service. Each good or service would require a fixed amount of purchasing power to assure its efficient operation. In the real world such uniform conditions are not found and the theoretical model of central places is distorted. The density of population is not uniform and the pattern of central places adjusts to the basic pattern of population density (Deshmukh, P.W. 1979).

The concept and logic of the theory should be given more importance rather than any of the theoretical ideas when a central place
model is used in organizing the spatial distribution of goods and services in an area.

The Central Place Theory does a good job of describing the spatial pattern of urbanization and the location of trade and service activity. It also does a good job of describing consumer market oriented manufacturing. Trade and service activity has an increasing relevance as the United State of America's economy shifts from manufacturing to services over time. Small town community economic developers can secure quite specific, relevant information about what kind of trade or service enterprise will likely work and what kind of enterprise will not likely work in a given small community. The theory was used to restructure municipal relationships and boundaries in the Federal Republic of Germany and the system is still in place today.

In spite of being deficient in certain respects, the central place theory has been used successfully as a guideline for relocation policy in Germany and North–Eastern Polders (Holland). It Israel, in the initial years, the location of settlements, population size, hierarchy and allocation of market and service functions were all determined by central place principles. The central place model offers the best fit and provides a basis for rational locations and efficient division of space and functions in case of certain specific areas like less developed regions with low population densities, drought prone subsistence farming areas, hilly and forest areas or essentially agricultural regions, which are yet not fully drawn in to a orbit of a integrated planning, it is now being recognized that, the approach to central place analysis should not only be from urban to rural but also from rural to urban, particularly in the case of predominantly agrarian economies (Diddee, Jayamala 1978).

Quite numerous observation carried on in various areas of the world have shown how useful the theory is to understand spatial
The Study of Central Places in Parbhani District

organization of most services to resident populations. The theory gives well enough account of differentiation of urban networks at middle levels scales, in relatively homogenous regions. The hierarchy of levels of services they concentrate, organized by frequency of use, amplitude of their spatial range and size of their thresholds of emergence. The theory has been used by spatial planning, notably to implement settlement of the polders in the Netherlands (Holland) or also to justify policy of “metropolis dequiligre” in France. It is also used as reference model by archeologists studying ancient settlement systems. On the other side, the theory hardly allows to predict distribution of retail and services in declining rural areas, where local factors encouraging a persistent location play a more prominent role than effects of additional cost of distance, or also in an urban environment where time accessibility takes a much stronger importance than physical distance and generates configuration that are much more complex than Christaller models.

In twenty century number of economists and geographers has investigated into the problem of organization of central goods and services. The important theories in this connection are as follows.

i) The location theory of Christaller (1933).
ii) The location theory of Losch (1944).
vi) A brief explanation of these theories would be useful in assessing the extent to which they could be of use in developing organizational systems.
The use of “growth pole” and “development pole” theory for the analysis and Planning of the development of underdeveloped and stagnating regions has been expanding rapidly. In the original form the basic feature of growth pole theory is the trivial observation, that “growth does not appear everywhere at the same time; it manifests itself in points or poles of growth, with variable intensities; it spreads by different channels and with variable terminal effects for the economy as a whole” (Perroux 1955). The concept of the growth pole in Perroux’s early work denotes an individual plant (firm) though one which occupies an abstract economic space rather than a specific geographical space. In 1950 Perroux defines the growth pole as, “centers (poles of foci) from which centrifugal forces emanate and to which forces are attracted. Each center being a center of attraction and repulsion has its proper field, which is set in the field of all other centers.”

Francois Perroux had conceived a growth pole to be a focus of economic development in an abstract economic space; it was interpreted by his disciples, particularly Facques Boudeville (1961), and modified the theory and made it applicable to geographical space.

Jacques Boudeville and other interpreters of Perroux’s growth pole concept replaced “economic Space” with geographic space, an idea that was readily adopted by regional planners and economic geographers who were pressed into making economic development plans on a regional scale. The idea was to identify selected nuclei for industrial growth to stimulate development in the surrounding area instead of focusing on the underdeveloped region as a whole. Today, as economic interactions encompass macro regions and became globalised, Perroux’s original theory seems likely to find validation. A recent example of such growth pole effects may be found in the Silicon Valley in San Jose, California in U.S.A. The information technology (I.T.) industry here grew at a
meteoric rate in the 1960’s, but the economic stimulus was not restricted to the state of California or even the United States.

Another thought advanced by Myrdal and Hirschman (1957-1958) identifies the transmission of development throughout geographical space resulting in a spilling of development over to transitional areas in between geographical poles as ‘trickling down’ and ‘spread’ effects (Sundaram, 1972).

The theory of geographical diffusion of innovations by Hagerstrand shows the close connection between the hierarchy of mean information fields and hierarchy of towns within the system of central places. According to his concept the leading cities, within the country, should give impulses first of all to towns of the next order, on the same analogy, economic development process may be conceived as trickling down through a network of intermediate and subsidiary growth centers and growth points in the hierarchic system, (Deshmukh, P.W. 1979).

The relationship between the growth centre and the surrounding regions is the important idea of the growth pole concept. The centre’s which have strong locational pull will be dominant focal points capable of transmitting growth impulses over a wide area. If growth processes are to be manipulated to achieve the widest dispersion I space. Then the focal points will have to be located in few selected agglomerations and the focal points of the lower order importance have to be dispersed as widely as possible.

The application of the concept of ‘Growth Poles’ to the central places in the study area has been made to identify the growth centers. There are 77 central places in the study region having different functional magnitude and importance.
8.2 Role of Present Hierarchy of Central Places in Regional Development:

The central places of the study area are grouped into four order of hierarchy.

i) First order centers – Regional service centers.

ii) Second order centre – Sub-Regional service centre

iii) Third order centre – Large size service centre

iv) Fourth order centre – Small size service centre.

The regional service centre (i.e. first order service centre) and the sub-regional service centers (i.e. second order service centre) provide economic service functions and infrastructural service like transportation, communication, marketing, banking, managerial services, wholesale trade and higher facilities in education and health. These centers have a dominance of industrial growth.

The large size service centre provides services and facilities like education, health, transport, administration, cultural activity, bank facilities. They can reach the population dependent on the primary sector through service points.

The small size service centre (i.e. fourth order central place) provides daily necessities to nearby rural population. The service centre of this order hardly has any productive activity. These service centers provide basic and daily needs of the surrounding rural population.

The hierarchy order of the central place and provision of goods and services in each order of hierarchy depends upon the consumer's travel and demand pattern. Commodities characterized by low transport cost. Transportation cost plays an important role in the spatial organization of socio economic services. The hierarchy of urban centers fits in large part of with a hierarchy of levels of services they concentrate, organized by frequency of use, amplitude of their spatial range and size of their
thresholds of emergence. The travel behavior also changes with the economic levels and agricultural prosperity of the people and this dynamic aspect of change must be taken into consideration while planning the spatial organization of socio-economic services.

8.3 Identification of Growth Centers:

Growth poles are to be a focus of economic development in an abstract economic space. They refer to the concentration of innovative and advanced industries that stimulate economic development in linked business and industries.

Growth centers are the regional focal points which are linked with the growth poles and are influenced by the activities generated there in. The growth centre is the centre of propulsive activities stopping the excessive flow of goods and services to the growth poles from the region. They act as stimulant to the regional development process. These growth centers could be identified by their geographic position, their functional role in the regional economy and their potential growth. The development of growth centre, by promoting the growth of the area will certainly help in the decentralization of concentrated population and economic growth in the metropolitan areas.

If we accepted the strategy of growth pole for regional planning, then the study area has two growth centers namely Parbhani and Gangakhed. These two growth centre are full-fledged growth centre of the area. Other centre which could be developed as growth centre are the Purna and Manwat of Second order central places and Jintur, Sonpeth, Palam, Sailu and Pathri of Third order central Places.

The town Bori and Zari are the third order central places, can also be developed as growth centre, the Bori is a large size village, located in the agriculturally prosperous area of Jintur tahsil and it is also an important agricultural market centre having two sub-market yard. This
centre place is famous as an agricultural trade centre. Zari is also located in the agriculturally prosperous area of Parbhani tahsil. It is only twenty Kilometer for town the Bori central place. Two of these are third order central places. Two of these third order central places are located on Parbhani – Jintur state highway. These two places can also be chosen for developing them as growth centre.

The existing growth and distribution of central places indicates that there is a concentration of central places in the central part of the area as compared to northern and southern part. The concentration of growth centres in the central part of the region has lead to the regional contrasts in population distribution and imbalance in the economic development of the region. To overcome from the problem it is felt that from the view point of spatial coverage, study region also needs two to three growth centers to complete the arrangement in space. That why some fourth order central places like Rani Sawargaon (Gangakhed Tahsil), Walour (Sailu Tahsil) and Charthana (Jintur Tahsil) had chosen to develop as growth centre which will have to plan rationally the entire area for the provision of services and facilities.

8.4 Planning for Service Centers:-

The central places in third and fourth orders of hierarchy are providing goods and services to their immediate hinterland. The central places of large and medium size rural settlements of these third and fourth orders are still neglected because of following reasons.

i) Most of these central places are having poor hinterland.

ii) Most of these central places are located nearer to the already developed and important central places.

iii) These central places are located far from the important transportation nodes and they are poorly accessible.
These central places could be developed as growth points. And these growth points should be planned properly and the facilities and services provided at these places should include specialized medical facility, banks, degree colleges, bus stands, and veterinary aid centre. Agro service centre, automobile workshops and sub-market yard because most of them are located in agriculturally prospers areas.

The facilities like higher education, specialized medical facilities should be at a distance of thirty kilometers. These centers can provide these services to the nearby central places. As the whole study region is of agrarian base, the facility of regulated market should be within thirty kilometer range. Such markets should be located at an average distance of fifty kilometers at highly accessible places, so that the collection and marketing of agricultural produce can be operated efficiently. If all these facilities are provided at these growth points, then the growth points can serve the nearby all population efficiently.

8.5 Identification of Functional Gap:-

To find out the functional gaps in the study region, is, essential for the provision of functions and services. To identify functional gaps following equations is used and gaps are find out for the functions like secondary schools, higher secondary school, senior college, primary health centre, co-operative Banks, sub market yard and weekly market. The functional gaps are finding out by considering population as a unit of measurement.

The equation is as follows –

\[ Mp = \frac{p}{Fur} \]  

(1)

Where,
Mp = Mean Population Served by a Single Unit of a given Function.

P = Total Population of the region.

Fur = Total number of Functional units of 1st function in the region.

\[ Xie = \frac{Pi}{Mp} \]  \hspace{1cm} (2)

Where,

\( Xie \) = Expected number of units of 1st function in the tahsil.

\( Pi \) = Population of the tahsil.

\( Xio \) = Observed number of units of 1st function in the tahsil.

When \( Xie \) value is greater than the \( Xio \) value then the area is inadequately served by that function and vice versa. With the help of above equation the functional gaps have been find out, considering tahsil as a unit.

8.6 Spatial Analysis of Functional Gaps:-

The functional gaps have been identified, considering tahsil as a unit for some basic functions like secondary schools, higher secondary Schools, senior colleges, and co-operative Banks, Primary Health centre, Weekly markets, and Sub Market Yards. And the scores are given in table no. 8.1. The table reveals that the function like secondary School eruption in Parbhani, Manwat and Sailu tahsils are poorly served. Gangakhed, Sonpeth, Purna, and Pathri tahsils are moderately served while Palam and Jintur tahsils are bitterly served tahsils of the study region.

In respect of higher secondary schools the tahsils like Parbhani, Purna, Manwat and Sailu are poorly served. Gangakhed, Palam, Sonpeth and Pathri tahsils are moderately served while only Jintur tahsil is bitterly served.
The higher education (Senior College) facility in the tahsils like Gangakhed, Palam, Purna, Pathri, Manwat and Sailu is poorly served. Moderately Served tahsils include Parbhani, Sonpeth and Jintur. This facility is not served bitterly in any tahsil of the study region.

Table No. 8.1
Parbhani District

Functional Scores for Selected Functions by Population as Unit

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Tahsil</th>
<th>Secondary School</th>
<th>Higher secondary school</th>
<th>Sr. college</th>
<th>P.H.C.</th>
<th>Co-operative Bank</th>
<th>Sub market yard</th>
<th>Weekly market</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Parbhani</td>
<td>-12.12</td>
<td>-6.36</td>
<td>+3.24</td>
<td>+13.33</td>
<td>-5.91</td>
<td>-2.61</td>
<td>-6.29</td>
</tr>
<tr>
<td>2</td>
<td>Gangakhed</td>
<td>+1.5</td>
<td>+2.49</td>
<td>-0.42</td>
<td>+1.1</td>
<td>-2.34</td>
<td>-0.08</td>
<td>-0.26</td>
</tr>
<tr>
<td>3</td>
<td>Palam</td>
<td>+4.67</td>
<td>+3.23</td>
<td>-0.37</td>
<td>-2.6</td>
<td>-2.85</td>
<td>+1.26</td>
<td>+0.89</td>
</tr>
<tr>
<td>4</td>
<td>Sonpeth</td>
<td>+1.29</td>
<td>+2.69</td>
<td>+0.02</td>
<td>-3.03</td>
<td>+2.79</td>
<td>-1.25</td>
<td>+2.05</td>
</tr>
<tr>
<td>5</td>
<td>Purna</td>
<td>+1.68</td>
<td>-1.34</td>
<td>-0.39</td>
<td>-3.79</td>
<td>-1.23</td>
<td>-1.05</td>
<td>-0.18</td>
</tr>
<tr>
<td>6</td>
<td>Pathri</td>
<td>+0.91</td>
<td>+1.58</td>
<td>-0.62</td>
<td>+1.35</td>
<td>-0.95</td>
<td>-1.07</td>
<td>+1.12</td>
</tr>
<tr>
<td>7</td>
<td>Manwat</td>
<td>-2.76</td>
<td>-4.17</td>
<td>-0.43</td>
<td>-2.85</td>
<td>+2.88</td>
<td>-0.82</td>
<td>-0.29</td>
</tr>
<tr>
<td>8</td>
<td>Sailu</td>
<td>-2.02</td>
<td>-4.17</td>
<td>-1.05</td>
<td>-5.41</td>
<td>0.22</td>
<td>+0.38</td>
<td>+2.17</td>
</tr>
<tr>
<td>9</td>
<td>Jintur</td>
<td>+6.88</td>
<td>+6.08</td>
<td>+0.05</td>
<td>+1.93</td>
<td>+7.39</td>
<td>+5.24</td>
<td>+5.15</td>
</tr>
</tbody>
</table>

*Source: Compiled by Author.*

Primary Health Centre facility is bitterly served in only Parbhani tahsil. This facility is moderately served in the tahsils like Gangakhed, Pathri and Jintur tahsil. In the tahsils like Palam, Sonpeth, Purna Manwat and Sailu the facility is poorly served.
PARBHANI DISTRICT
Functional Deficiency Areas for Secondary School

Fig. No.8.1

Source: Compiled by the Author.

PARBHANI DISTRICT
Functional Deficiency Areas for Higher Secondary School

Fig. No.8.2

Source: Compiled by the Author.
PARBHANI DISTRICT
Functional Deficiency Areas for Primary Health Centre

Index
- Beterly Served
- Moderately Served
- Poorly Served

Fig. No.8.3

Source: Compiled by the Author.

294
PARBHANI DISTRICT
Functional Deficiency Areas for Co-Oprative Banks

Parbhani District
Functional Deficiency Areas for Sub Market Yard

Index
- Beterly Served
- Moderately Served
- Poorly Served

Source: Compiled by the Author.

Fig. No. 8.5

Fig. No. 8.6
PARBHANI DISTRICT
Functional Deficiency Areas for Weekly Markets (2001)

Betterly Served
Moderately Served
Poorly Served

Index

Betterly Served
Moderately Served
Poorly Served

296
In respect of banking (co - operative Banks) facility the tahsils like Parbhani, Gangaked, Palam, Purna and Pathri are poorly served. This facility is moderately served in tahsil like Sonpeth Manwat and Sailu while the facility is bitterly served only in the tahsil Jintur.

The Sub Market Yards are bitterly served only in the tahsil of Jintur. The facility is moderately served in Palam and Sailu tahsil while tahsils like Parbhani, Gangakhed, Sonpeth, Purna, Pathri and Pathri are poorly served.

The weekly Market facility is poorly served in Parbhani, Gangakhed, Purna and Manwat tahsil. Palam, Sonpeth, Pathri and Sailu tahsils core moderately served while Jintur tahsil served bitterly.
References


6 Dacey, M.F. (1958): 'Analysis of Central Place and point pattern by a nearest neighbor method,' Land studies in Geography (Series - B), 24, j pp.55-75.


