CHAPTER - VI
SERVICE CENTRES IN THE CITY REGION

It is an open fact that today, transformation of rural habitat is highly linked with the innovatory waves of new techniques and ideas. It may be admitted that rural service centres are clusters/nodes in the rural space economy and function as service centres in a regional framework by virtue of concentration and play an important role in micro-regional development by stimulating and generating new forces of change and by diffusing innovations in their tributary/service areas.¹ Moreover, it is the basic question in modern times whether India should decentralize its production and organizational units down to the village level, as many traditional think, or should it go for the metropolitan and city development concentration as many economists and other social scientists and planners moving on western thinking, propagate?² Or else, there should be an effort of service centre building over a diverse size spectrum through which we feel, if scientifically maintained, the nation can undoubtedly improve her socio-economic pattern up to grassroots level.³

Settlements which serve the surrounding areas by providing some infrastructural services, are generally signified as service centre. Their origin and growth are fully associated with the regional economy, socio-cultural
The concept of service centres concentrates upon three spatial attributes, viz (i) the set of clusters/nodes of human activity resulting from relative location, size and functional composition (ii) the inert-linkages between/among the clusters/nodes, and (iii) their distribution and density patterns. Perroux defined the theory of growth centres. Walter Christaller (1931) postulated the general framework, system in the hexagonal system of settlements or central places from lower to the high rank with the extension of their services area. The scheme of central places may be put in as under as suggested by Christaller -

1. The central places are uniformly spread over an isotropic or level plain surface having a hexagonal services area.

2. The hierarchy of central places is determined by the concentration of central functions at any centre. The higher the concentration/number or complexity of functions, the higher the order of hierarchy of any centre. On the other hand, the lower order functions are available at lower order central place but at same time, higher order central places, also represent there functions.

3. As the higher order centres influence a larger area than those of lower order centres, the centres of higher order are more widely spread over area than the lower order centres. The centres holding equal rank or
status will maintain an equal hypothetical distance and will cover an equal area in hexagonal arrangement.

4. The market centre which is the smallest in the Christaller’s grading will have a marketing region being guided by the K=3 principle.

5. A hierarchy of centres can be arranged in different forms. Christaller has formulated three principles i.e. K=3, K=4 and K=7 which signify marketing, transportation and administration respectively.

**Identification and Location of Services Centres**

The role of service centres is primate as a service centre circulate the new innovations of science and technology and the regional development may seldom be secured without a proper study of service centres and their regional integration to the area or the region served by a service centres whether a big rural settlement, town or a city. Before identifying the service centres in the city region of Bulandshahr, some of the major objectives of the study of service centres are noted below-

(i) To mark the pattern of the service centres and their service area.

(ii) To trace the gaps and interactions so as to delineate the areas of adequate and inadequate service centres.

(iii) To project the regional requirement of service centres in future.

(iv) To suggest new service centres in the areas of regional service centres gaps.
(v) To proposed the upgrading of service status of lower order service centres in view of the requirement of the region matching with the behavioural setting of the service centres in hexagonal system.

(vi) To secure transformation in regional society and economy by organization a strong and balanced spatio-functional base for innovatory movements.

The service centre in the city region of the Bulandshahr identified by involving multi-faceted approach which is based on rational mathematical regional grounds which may be pointed out as under -

(i) It should be a permanently inhabited settlement.

(ii) Its population should be above the mean city regional population i.e. approximately above 2500 persons as per 2001 census.

(iii) It must be performing at least 3 of the 5 important functions or sub-functions out of educational institution upto inter college, child care & maternity and family welfare sub-centre, a Nyay panchayat, having linked with a metalled road to have easy accessibility to its surroundings or having weekly or regular market.

(iv) The occupational structure having sizeable ratio of other workers inclusive of tertiary workers at least above the half of the mean percentage of the region i.e. 39.54% and half of it approximately above 20% of the workers of any settlement.
(v) Above all the towns or urban centres have been identified as service centres to their surrounding regions by virtue of the urban centres functional interaction with the rural areas.

Besides the 16 urban centres inclusive of Bulandshahr city and other towns and Nagar Palikas, namely Sikandrabad, Aurangabad, Gulaothi, B.B. Nagar, Siana, Bugrasi, Khanpur, Anupshahr, Jahangirabad, Debai, Narora, Shikarpur, Pahasu, Chhatari and Khurja, a number of 209 service centers (figure- 31) consisting of large rural settlements and have been identified by involving the above mentioned criteria. Some of the important rural service centres which are identified, may be noted here for the completion of the study as under -

1. **Sikandrabad tashil** - Gesupur, Bilsuri, Kanwara, Ismailpur, Chandaru, Sarai Ghasi, Rasoolpur, Barodah, Barkherah, Tilbegumpur, Banchawali and Gangraul etc.

2. **Bulandsahr tahsil** – Ahmad Nagar, Salavat Nagar, Sharifpur Bhansroli, Nimchana, Lakhavati, Sarai Chhabila, Shivali, Manglaur, Kisoli, Agota, Khushhal Pur, Kurli, Baral, Ginorashekh, Malagarh, Jauligarh, Mamam Kalan, Utrawali and Bhatona etc.

3. **Siana tahsil** – Chitsona Alipur, Saidpur, Hajipur, Jalalpur, Bukalana, Verafirojpur, Makri, Unchagaon, Jarol, Parwana, Daulatpur Kalan, Amargarh, Umarpur and Ghunghraoli etc.
4. **Anupshahr tahsil** – Navi Nagar, Khalaur, Khadana, Sankhani, Charora, Paharpur, Sherpur Bangar, Bagsara, Birauni, Ahar Banger and Malakpur etc.

5. **Dibai tahsil** – Viraura, Daulatpur Khurd, Dibai (Dehat), Viraura, Ratanpur, Danpur, Rasoolpur, Aurangabad Kasair, Jargwan, Karnvas Bangar, Badarpur and Belaun etc.

6. **Shikarpur tahsil** – Ahmadgarh, Banaul, Rasulpur, Kaisawan, Lalner, Sarawa, Chaudhera, Riwara, Khakuda and Salempur etc.

7. **Khurja tahsil** – Sarangpur, Gothni, Saudahavipur, Maina Mojpur, Bauroli, Munda Khera, Baghrai, Muni, Aterna and Karaura etc.

   Moreover, the list of the service centres identified with their population and centrality have been given in annexure-2 and the location of the service centres at tahsil levels in perspective of their regional and inter-regional linkages have been revealed by figure 31.

**Distribution and patterns**

The settlement system and a development of various nodes as service centres in any region are seldom distributed uniformly. The distribution of settlements or service centres has been an outcome of various geographical, historico-cultural, socio-economic and the infrastructural factors acting upon the whole of the regional settlement system. Bulandshahr city region congruent of Bulandshahr district is a level plain and a geographical unit, it is more or less uniform micro regional unit having the uniformity history,
culture, society and economy. Though the whole of the city region represents a more or less uniform geographical unit, yet the transport linkages and the development of the facilities like inter college, family welfare sub-centre, or other functional setup have caused regional variations of service centres under the influence of local leadership, and the other micro factors influencing the location of settlement functions as well as the size and growth of population of various service centres.

The distribution patterns of service centres in Bulandshahr district at tahsil levels have been tabulated by the table 6.1. The salient features of the distribution of service centres may be discussed in view of their number, mean area and population served by a service centres as following –

**Table 6.1: Bulandshahr City Region: Distribution patterns of service centres.**

<table>
<thead>
<tr>
<th>Tahsil</th>
<th>No. of service centers</th>
<th>Percentage of total service centres</th>
<th>Average population served</th>
<th>Average area (km²) served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sikandrabad</td>
<td>16</td>
<td>7.11</td>
<td>15799</td>
<td>24.32</td>
</tr>
<tr>
<td>Bulandshahr</td>
<td>48</td>
<td>21.33</td>
<td>15273</td>
<td>12.56</td>
</tr>
<tr>
<td>Siana</td>
<td>44</td>
<td>19.56</td>
<td>10497</td>
<td>18.80</td>
</tr>
<tr>
<td>Anupshahr</td>
<td>29</td>
<td>12.89</td>
<td>10383</td>
<td>10.00</td>
</tr>
<tr>
<td>Dibai</td>
<td>34</td>
<td>15.11</td>
<td>11196</td>
<td>14.78</td>
</tr>
<tr>
<td>Shikarpur</td>
<td>27</td>
<td>12</td>
<td>14148</td>
<td>20.94</td>
</tr>
<tr>
<td>Khurja</td>
<td>27</td>
<td>12</td>
<td>14873</td>
<td>20.88</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>225</strong></td>
<td><strong>100</strong></td>
<td><strong>12947</strong></td>
<td><strong>16.63</strong></td>
</tr>
</tbody>
</table>
1. The service centres of the city region of Bulandshahr as distributed at tahsil level and depicted by figure– 31 and table 6.1 makes the fact clear that the service centres are having a highest number of 48 centres in Bulandshahr tahsil and a minimum of 16 centres in Sikandrabad tahsil and the area of the tahsil plays no decisive role in the numerical distribution patterns at tahsil levels.

2. Anupshahr tahsil represents the most effective organization of service centres as the average population served by a service centres is minimum of 10383 persons per centres while tahsil Sikandrabad has shown the weakest organization of service centres with the highest mean population is being served by a service centres as per 2001 population which is calculated to be 15799 persons which is also evidenced by the figure – 31.

3. The areal distribution patterns of service centres at tahsil level exhibit that the mean area served by a service centres is minimum in Anupshahr tahsil i.e. 10.00 km² per centre while it is the maximum in Sikandrabad tahsil with a mean area of 24.32 km²/centre.

Moreover, the patterns of distribution of service centres have been examined by analyzing the randomness index and the estimated and actual inter service centre distances. The randomness or dispersion of the village has
been analyzed on the basis of nearest neighbour distance of villages in space which was envisaged by Clark and Evans (1954)\(^8\). This technique measures the variation or departure of location points from nucleated or random distribution. In this analysis, it is assumed that points are distributed randomly where it is supposed that each location has an equal chance of containing a point while in the real world, settlements are not always random pattern.\(^9\)

The following formula has been considered to be the most suitable in the regional context –

\[
Rn = \frac{rO}{rE}
\]

Where, \(Rn\) represents the randomness value, \(rO\) is the measured mean distance between ‘nearest neighbour’ points and \(rE\) is the expected mean distance if all points were randomly distributed in space.

Further,

\[
rE = \frac{1}{2 /N /A}
\]

Where, \(N\) is the number of villages in an enumeration unit and \(A\) is the area of the same unit.
The results of the mathematical analysis of the above mentioned formula have been given in table 6.2 which may be discussed in regional context as under-

**Table 6.2: Bulandshahr city region : Distribution pattern of service centres.**

<table>
<thead>
<tr>
<th>Tahsil</th>
<th>rO</th>
<th>rE</th>
<th>Rn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sikandrabad</td>
<td>1.63</td>
<td>2.47</td>
<td>0.66</td>
</tr>
<tr>
<td>Bulandshahr</td>
<td>1.98</td>
<td>1.77</td>
<td>1.12</td>
</tr>
<tr>
<td>Siana</td>
<td>2.37</td>
<td>2.17</td>
<td>1.09</td>
</tr>
<tr>
<td>Anupshahr</td>
<td>2.57</td>
<td>1.58</td>
<td>1.63</td>
</tr>
<tr>
<td>Dibai</td>
<td>2.96</td>
<td>1.92</td>
<td>1.54</td>
</tr>
<tr>
<td>Shikarpur</td>
<td>2.25</td>
<td>2.29</td>
<td>0.98</td>
</tr>
<tr>
<td>Khurja</td>
<td>2.41</td>
<td>2.28</td>
<td>1.05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2.46</strong></td>
<td><strong>2.04</strong></td>
<td><strong>1.21</strong></td>
</tr>
</tbody>
</table>

1. An analysis of table 6.2 makes it clear that service centres in Sikandrabad tahsil as also apparent from the figure 31 are distributed nearer to nucleated patterns with a minimum Rn value of 0.66.

2. The service centres reveal random pattern of dispersion in the tahsils of Bulandshahr (1.12), Siana (1.09), Shikarpur (0.98) and Khurja having 1.05 Rn value.
3. The tahsils of Anupshahr and Dibai have evidenced a pattern of dispersion towards uniform with Rn values of 1.63 and 1.54 respectively in the two tahsils.

**Size and Spacing**

A service centre performs various tertiary functions generally in the capacity of its size of population. A service centres whether rural or urban serves the magnitude of area and its regional population as per its population size. The larger the size of service centre and larger is the area served.

The size of settlements is much influenced by the economic productivity of its surroundings, which may properly be called a ‘hinterland’ of the settlements. On the other hand, the concept of spacing is closely related to the locational arrangement of villages with respect to one another. Thus, size and spacing of centres are highly inter-related aspects which govern spatial pattern of centres in any region and their internal setting. The size has been considered in terms of areal extent and the aggregate population of a centres and all its hamlets. Spacing is not only subject to the density of centres but it is also influenced by the number of hamlets i.e. fragmentation and agglomeration of the clusters of residences.

The spacing of the centres is calculated by using the following formula at Nyay Panchayat level –
D = 1.075 \sqrt{A/N}

Where, D is the theoretical distance between points in hexagonal arrangement, A is the area of nyay panchayats, N is the number of rural settlements per nyay panchayat.

The size and spacing of service centres at tahsil levels in Bulandshahr district are given in table 6.3 and revealed by figure- 32 which may be analyzed in regional context as under –

**Table 6.3: Bulandshahr city region : Size and spacing of service centres.**

<table>
<thead>
<tr>
<th>Tahsil</th>
<th>No. of service centres</th>
<th>Average size per service centres</th>
<th>Mean distance (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sikandrabad</td>
<td>16</td>
<td>3673</td>
<td>1.93</td>
</tr>
<tr>
<td>Bulandshahr</td>
<td>48</td>
<td>3550</td>
<td>1.58</td>
</tr>
<tr>
<td>Siana</td>
<td>44</td>
<td>4225</td>
<td>2.18</td>
</tr>
<tr>
<td>Anupshahr</td>
<td>29</td>
<td>3423</td>
<td>1.54</td>
</tr>
<tr>
<td>Dibai</td>
<td>34</td>
<td>4337</td>
<td>1.84</td>
</tr>
<tr>
<td>Shikarpur</td>
<td>27</td>
<td>3464</td>
<td>1.79</td>
</tr>
<tr>
<td>Khurja</td>
<td>27</td>
<td>3597</td>
<td>1.81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>225</strong></td>
<td><strong>3789</strong></td>
<td><strong>1.81</strong></td>
</tr>
</tbody>
</table>
1. **Areas of low sized centres (3500 persons >)**

   After an analysis of the mean size of service centres with average population of 3464 persons in 2001, the low sized services centers below 3500 persons at tahsil levels as given in table 6.3 include the tahsils of Anupshahr and Shikarpur.

2. **Areas of medium sized centres (3500-4000 persons >)**

   The medium sized centres between a population size of 3500-4000 persons in 2001 are represented by Sikandrabad, Bulandshahr and Khurja tahsils.

3. **Areas of High Sized Centres (4000 persons <)**

   The large size service centres with mean central population above 4000 persons occupy the tahsils of Siana and Dibai.

   The analysis of spacing of service based on mean inter centre distance on the basis of table 7.3 and figure 33 have been made and the following discussions clarify the situation in regional context –

1. **Areas of low spacing (1.75 km >)**

   This category includes the tahsil of Bulandshahr and Anupshahr with mean inter centre distance below 1.75 km. In the two tahsil service centres are arranged nearer to each other.
2. **Areas of medium spacing (1.75–1.85 km.)**

This category stretches over the tahsils of Dibai, Shikarpur and Khurja i.e. covering the southern part of the city region of Bulandshahr.

3. **Areas of high spacing (1.85 km. <)**

Tahsil Siana and Sikandrabad represent the high spacing of service centre with above 1.85 km. mean inter centre distances as also shown by figure 33.
REFERENCES


5. Harmansen, T. Spatial organization and economic development the scope and task of spatial planning, institute of development studies, Mysore, 1971, p.67.


8. Clark, P.J., and Evan, P.C. Distance to nearest neighbour as a measure of spatial relationship in population ecology, 1954.

10. Despande, C.D., Cities and towns of Bombay province, the Indian geographical journal, vol. xvi, no. 3, 1941, p. 269

11. Singh, R.B., Geography of rural development, the Indian, micro-level experience, inter-India pub. New Delhi, 1986, P. 55
