DEMARcation of demographic regions

In the previous chapters, various demographic variables relating to the pattern, trend and the relationship with other variables have been analysed in detail. This analysis provides a strong foundation for the present chapter in which demarcation of demographic regions in the state is attempted.

The concept of region is defined by different scholars in different ways. Widely acceptable definition of region is that it is "an area having the homogeneity of the physical and cultural phenomena". Demarcation means marking an imaginary boundary among various regions. Rationalization is the process of delineating regions.

Previous literature

Demarcation of demographic regions is of great interest and importance for geographers and other social scientists and development planners. [N.P. Goel, 1994] Disparities at the various levels among population regions is most often an important indicator of the economic health of countries. Geographers are interested in a precise delineation of regional disparities in economic development and growth because it brings to light the most important manifestations of aerial differentiation, in the process of development among different regions. (Nath. V. 1970) Demarcation of demographic region is also important for government to take measures to develop the backward areas.

N.P. Goel (1994) has analyzed the demographic region of Uttar Pradesh, based on secondary information of the decade of 1971-1981 and used the composite index method to demarcate the demographic region and used the choropleth technique to analyze the data and taken taluk as unit of analyses. The author has taken twelve selected indicators of population to measure the level of composite index. These
indicators are size of household, density of population, sex composition of population, proportion of urban population to total population, ratio of literates to total population, proportion of rural literates to total rural population, proportion of female literacy rate to total females, ratio of scheduled caste to total population, ratio of non agricultural workers to total population, females participation ratio in non agricultural activities to total female workers, ratio of rural non agricultural workers to total rural workers.

The whole state has been divided into six population regions on the basis of rank value. These are; very high developed population region, high developed population region, relatively high developed population region, and relatively low developed population region, low developed demographic region and very low developed population region.

Very high developed demographic region is that which has big urban center situated and is economically, commercially and industrially developed and also has administrative center and district head quarters and good transport facilities particularly railways. These regions are situated in upper Ganga Yamuna Doab region.

Those regions, where newly developed agro based industries are found, commercial and administration centers are there, big urban centers and education centers are situated, agriculture and household industries are developed and sufficient transport facilities are found, are the regions of high and relatively high developed population regions. Such regions are upper and middle Ganga Yamuna Doab and Rohilkhand, Bundelkhand and adjacent area and eastern Utter Pradesh.

Those regions which suffer from lack of transport facilities, lack of big industries and household industries and dominated by substance agriculture and low degree of urbanization, mass illiteracy, agricultural backwardness and mass participation of working force in agriculture are low and very low developed population regions. These regions are Uttarakhand, Eastern Awadh plain, Eastern
Ganga plain middle northern part of the state that included the western Rohikhand and North Awadh plain.

Navarathna Prakash Goel (1989) also made an attempt to demarcate the population regions of Rohilkhand during the period of 1981, based on secondary data and used the composite index method to demarcate the demographic region and again taking taluk as unit of analysis considering sixteen indicators. These indicators are density of population in 1981, growth of population during 1971-81, density of urban population in 1981, scheduled caste population to total population in 1981, ratio of workers to total population in 1981, ratio of workers engaged in house-hold industries to total workers in 1981, ratio of workers engaged in non agricultural sector of economy in 1981, Length of Road per thousand person in 1982-83, length of railway line per ten thousand persons in 1982-83, density of railway per thousand km², area in 1982-83, per capita cultivated land in rural area in 1982-83, per capita area under food crops in rural area in 1982-83, ratio of literacy in 1981 and ratio of female literates to total female population in 1981. The whole region has been divided into 4 demographic regions on the basis of total rank score, viz., high developed demographic region, relatively high developed demographic region relatively less developed demographic region and less developed population region.

High developed demographic region are those which have big urban centers, commercial and administrative center and district head quarters and good transport particularly railways. Those places where agriculture and house hold industries are developed and district head quarters are present and transport facilities are available, are relatively high developed population regions. Relatively less developed and less developed population regions are located in the places where degree of urbanization was low, agriculture is backward, high percentage of workers are engaged in agricultural activity, mass illiteracy is dominant, underdevelopment of industries and house hold industries, is common and lack of effective transport facilities particularly railways also common.
Above reviewed literature is related to the demographic regions of few states of India. According to this those regions having big urban centers, where commercial and industrial characteristics are very improved and also has good transport facilities particularly railway, also which are administrative centers and district head quarters and where people are engaged on tertiary sectors, are demographically very highly developed regions than the other regions.

Those areas which are dominated by agricultural activities, backwardness of industrial, commercial activities, rurarlity and low levels of literacy are the areas of low developed demographic regions.

DEMARCATION OF DEMOGRAPHIC REGIONS OF KARNATAKA STATE

After having reviewed the available literature on demarcation of demographic regions it is attempted below to carryout the most important and central theme of this research work that is to demarcate the demographic regions of Karnataka and to highlight the major characteristic feature of these regions. Demarcation of the different demographic regions of Karnataka is done with the help of various demographic variables.

To demarcate the demographic regions of Karnataka state, the methodology adopted in composite index method which has been calculated using the following variables for 1961, 1981 and 2001. Further following steps have been adopted.

1. Taluk is taken to unit of analysis.

2. Nine selected demographic indicators have been examined in terms of percentage value for each taluk.
3. All the taluks of the state have been ranked for each characteristic of population, according to the value of each indicator, using Kendall’s ranking method.

4. The values of all the nine variables for each taluk have been computed to obtain the total rank score and on the basis of total rank score, all the taluks are categorized.

5. Those taluks which show very low total rank score are designated in this study as highly developed and taluks where show high level of total rank score are considered as demographically low developed regions.

The following nine demographic indicators have been selected to demarcate the demographic regions of Karnataka state. They are,

1. Density of population
2. Growth of population
3. Sex ratio
4. Literacy
5. Female literacy
6. Proportion of urban population to total population
7. Ratio of non agricultural workers to total workers
8. Ratio of scheduled caste population to total population
9. Ratio of scheduled tribe population to total population

The total rank score in obtained using these variables (Appendex 3) on the basis of these score the state has been divided in to 5 demographic regions viz.,

1. Very high developed demographic region.

   (Total rank score less than 500)
2. Relatively high developed demographic region.
   (Total rank score between 501 to 650)

3. Moderately high developed demographic region.
   (Total rank score between 651-800)

4. Low developed demographic region
   (Total rank score between 801-950)

5. Very low developed demographic region
   (Total rank score more than 951)

**DEMOGRAPHIC REGION OF KARNATAKA**

On the basis composite index method, the state can be divided into five demographic regions. However, the number of taluks in each range of composite index is not uniform over the period of time.

**Table 7.1 Distribution of taluks in the state by ranges of total rank value**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No of taluks</td>
<td>% of taluks</td>
<td>No of taluks</td>
<td>% of taluks</td>
<td>No of taluks</td>
<td>% of taluks</td>
</tr>
<tr>
<td>&lt;500</td>
<td>13</td>
<td>7.6</td>
<td>19</td>
<td>10.9</td>
<td>26</td>
<td>14.9</td>
</tr>
<tr>
<td>501-650</td>
<td>33</td>
<td>19.2</td>
<td>27</td>
<td>15.4</td>
<td>27</td>
<td>15.4</td>
</tr>
<tr>
<td>651-800</td>
<td>42</td>
<td>24.4</td>
<td>51</td>
<td>29.1</td>
<td>41</td>
<td>24.0</td>
</tr>
<tr>
<td>801-950</td>
<td>51</td>
<td>29.6</td>
<td>36</td>
<td>20.6</td>
<td>31</td>
<td>17.7</td>
</tr>
<tr>
<td>&gt;950</td>
<td>33</td>
<td>19.2</td>
<td>42</td>
<td>24.0</td>
<td>50</td>
<td>28.6</td>
</tr>
</tbody>
</table>

The table 7.1 and fig 7.1 show these points vary clearly. It is clear that number of taluks both in lower ranges of below 500 ranks and in higher ranges of above 950
ranks has increased from 1961 onwards. But the number of taluks in the range of 501-650 ranks and 651-800 ranks has decreased from decade to decade, but in the range of 801-950, the number of taluks has decreased rapidly.

Fig 7.1 Changes in range of Demographic regions in Karnataka

SPATIAL PATTERN OF DEMOGRAPHIC REGIONS

The numbers of taluks in different range are not equally distributed throughout the state and it varies from region to region. Out of 175 taluks of the state, 26 taluks are found in the range of below 500 ranks which is the very high developed demographic region of the state in 2001, 50 taluks (Table 7.1) are found in the range of above 950 ranks which is very low developed population regions of the state, 27 taluks are found in the range between 501-650 ranks which is relatively high developed demographic region of the state, 41 taluks are found in the range of 651-800 ranks, it is moderately developed demographic region of the state and 31 taluks are found in the range of 801-950 ranks which is low developed demographic region of the state. A brief description of each of these demographic regions is given below.
Very high developed demographic region

Those areas which are characterized by higher percentage of agricultural activities, urban population, literacy both total and female, high density and sex ratio lower percentage of population growth and SC/ST population, are considered as very high developed demographic regions. Out of 175 taluks of the state twenty six taluks come under total rank score of below 500. Which are demographical very high developed according to the above parameters.

Table 7.2 Very High Developed Demographic Region in Karnataka - 2001

<table>
<thead>
<tr>
<th>Type of Demographic region</th>
<th>Total Rank score</th>
<th>Number of taluks</th>
<th>% of total taluks</th>
<th>Name of the Taluks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high developed demographic region</td>
<td>&lt; 500</td>
<td>26</td>
<td>14.9</td>
<td>Bangalore north, Bangalore south, Channapattana, Belagaum, Madikeri, Gadag, Hubli, Hassan, Bangarpet, Mandya, Mysore, Ankola, Bhatkala, Honnawar, Karwar, Kumta, Siddapur, Sirsi, Bhadrawathi, Shimoga, Buntwal, Kundapura, Karkal, Mangalore, Puttur, Udipi.</td>
</tr>
</tbody>
</table>

Very high developed demographic region of the state is mainly concentrated along the coastal belt because in this belt non agricultural activities are predominant, literacy (both total and Female) and sex ratio are very high and decadinal population growth rate is very low except Mangalore, Kundapura, Udupi and Kumta taluks in coastal region and Badravati and Shimogga taluks in malnad regions. And some part of malnad is another important pocket of very high demographically developed region of the state (Fig 7.2). In this part plantation activities are predominant and in this belt literacy (both total and Female) and sex ratio are very high and also decadinal population growth rate is low. One more interests point is that Scheduled caste and scheduled tribal population is very low and low level of urban area except Mangalore.
and Karwar taluks in coastal, and Shimoga in malnad region. Hence these areas are very high developed population regions.

Seven taluks of Southern maidan, three taluks in northern maidan region constitute another important part of the very high developed population regions of the state. These parts are characterized by urbanization; percentage of non-agricultural activities like commercial, industrial activities is more than in other parts of the state. Density is more particularly in surrounding area of Bangalore, Huballi-Darwad and Balgam taluks than in other parts of the region. Scheduled caste and scheduled tribe population is low, both general and female literacy is more but sex ratio is low. Further the population growth rate is very high due to the migration from other parts of the state and country.

**Relatively high developed demographic region**

Twenty seven taluks have recorded total rank of between 501-600. Which are considered as relatively high developed demographic region. This region is mainly situated in the malnad region (12 taluks) reason for this are that this is belt where larger proportion of people are engaged in plantation activity and also in this belt sex ratio high and both general and female literacy is very high. But density of population, percentage of urban population to total population and SC population is very low. And also ST population is very low except some southern part of Malnad regions.

Some taluks of this range are located adjoining the very high developed regions of the state, some part of southern maidan (10 taluks), very small pocket in central part (2 taluks) and very few in northern maidan (3 taluks) of the state. These parts are characterized by urbanization, and small industries and also more commercial activities and some towns of these taluks are both taluk and district head quarters.
Table 7.3 Relatively Very High Developed Demographic Regions in Karnataka -2001

<table>
<thead>
<tr>
<th>Type of Demographic region</th>
<th>Total Rank score</th>
<th>Number of taluks</th>
<th>% of total taluks</th>
<th>Name of the Taluks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relatively very high developed demographic region</td>
<td>501-650</td>
<td>27</td>
<td>15.4</td>
<td>Ramanagaram, Chikodi, Bagalkot, Chikamagalur, Kadur, Koppa, Sringeri, Davanagee, Darwad, Harihar, Somavarpet, Virajapet, Arsikere, Channarayapatna, Manjrabad, Maddur, Srirangapatna, Supa, Yellapur, Sagar, Tirthahalli, Belthangadi, Sulia, Kunigal, Tiptur, Tumkur, Turuvekere</td>
</tr>
</tbody>
</table>

Fig 7.2 Patterns of Demographic regions of Karnataka in 1961, 1981 and 2001

Moderately developed demographic region

Forty one taluks appear in the total rank between 651-800, which are considered as moderately developed population regions. These are distributed over
the entire state. Out of 41 taluks 6 taluks are in malnad region where larger percentage of population is engaged in plantation and forestry activity and in this part both total and female literacy is high and sex ratio is also high and territorially it is closer with high developed population region. But density of population, percentage of urban population to total population and share of SC and ST population is very low. 18 taluks are in southern maidan which is another moderately developed population region. These taluks are in and around Bangalore and this region emerged as mini industrial center of the state with good transport facilities and also an improved commercial activity and again it is closer to high developed population regions. And four taluks are in north eastern part, 10 taluks in northern maidan three taluks in central part of the state which are again moderately developed demographic regions of the state.

**TABLE 7.4 Moderately Developed Demographic Region in Karnataka - 2001**

<table>
<thead>
<tr>
<th>Type of Demographic region</th>
<th>Total Rank score</th>
<th>Number of taluks</th>
<th>% of total taluks</th>
<th>Name of the Taluks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderately developed demographic region</td>
<td>651-800</td>
<td>42</td>
<td>42</td>
<td>Anekal, Devanahalli, Doddaballapur, Hoskote, Magadi, Nelamangala, Hukkeri, Sampagan, Bellary, Hospet, Bidar, Badami, Bijapur, Hungund, Jamakhandi, Mudigere, Narasimharajapura, Tarikere, Dharwar, Byadagi, Haweri, Nargund, Navalagund, Ranibennur, Ron, Shiggaon, Gulbarga, Alur, Arkalgud, Bellur, Holenarasipura, Chikaballapura, Kolar, Krishnarajapet, Malavalli, Nagamangala, Pandavapura, Krishnarajanagar, Haliyal, Hosanagar, Shikaripura, Chikkanayakana halli.</td>
</tr>
</tbody>
</table>

163
In these areas there are urban areas led to development of industries and commercial activities and low density of population and lower growth rate of population, both male and female literacy is low and sex ratio is moderately high except in areas around Bangalore taluk.

**Low developed population region**

Thirty one taluks have recorded total rank between 801-950, which are considered as low developed population regions. Low developed demographic region is mainly found in some part of southern maidan (11 taluks) region. These taluks are socio-economically backward and larger proportion of people are engaged in agricultural activity which depend upon rainfall. Total and female literacy rate is very low and there are no development of industries and low degree of urbanization. Proportion of SC and ST population is more, Sex ratio is low and density of population is also low, population growth rate is moderate.

**Table 7.5 Low developed demographic region in Karnataka: 2001**

<table>
<thead>
<tr>
<th>Type of Demographic region</th>
<th>Total Rank score</th>
<th>Number of taluks</th>
<th>% of total taluks</th>
<th>Name of the Taluks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low developed Demographic region</td>
<td>801-950</td>
<td>31</td>
<td>17.7</td>
<td>Kanakapura, Gokak, Khanapur, Parasgod, Ramdurg, Hadagali, Mudebihal, Chitradurga, Hosadurga, Hangal, Hirekerur, Kalagatagi, Kundagol, Savanur, Shirahati, Chintamani, Malur, Mulabagal, Sidilaghatta, Chamarajanagar, Gundlupet, Hunsur, Nanjangud, Tirumakudalu Narasipura, Mundagod, Gangavathi, Koppal, Raichur, Honnali, Sorab, Gubbi.</td>
</tr>
</tbody>
</table>
13 taluks in northern maidan region, two taluks in central part of the state, three taluks in malnad and two taluks in north eastern part are other important belts of low developed demographic region of the state. These parts are largely rural biased. Higher percentages of people depend upon agriculture. Lacks of industries, lack of irrigational facilities are other features of these taluks and also they are backward both economically and commercially.

**Very low developed Demographic region**

The remaining fifty taluks of the state recorded total rank of more than 950. These are very low developed demographic region, which are found mainly in north-eastern part and some small pocket in extreme west of north western part, extreme south and north of southern maidan, north of northern maidan, extreme east of south eastern part and central part of the state.

With 21 taluks North-eastern part (i.e., Hydrabad-Karnataka region) is one of most important region of very low developed demographic belt of the state, because this region is socio-economically highly under developed and characterized by very low degree of urbanization. Higher percentages of population depend mainly upon agriculture which is substance type. This region is also characterized by lack of effective transport facilities, lack of industrial development and household industries and also in this region population growth is very high and mass illiteracy common, percentage of SC population is high; there is low level of density of population. These are all the features of this belt.

Eleven taluks in the northern maidan region, four taluks each in central part and eastern part of the state, three taluks in extreme south of southern maidan and seven taluks in extreme east of south eastern part of the state also belong to this category. In these taluk also the proportion of rural population is very high and participation in agricultural activities is more and low level of urbanization, backwardness of agriculture, under development of industrial sector and house hold
industries, very low level of economic and commercial development and male illiteracy lack of transport facilities are other main features of this region. Further both SC and ST population is more.

Table 7.6 Very Low Developed Demographic region in Karnataka - 2001

<table>
<thead>
<tr>
<th>Type of Demographic region</th>
<th>Total Rank score</th>
<th>Number of taluks</th>
<th>% of total taluks</th>
<th>Name of the Taluks</th>
</tr>
</thead>
</table>

The spatial pattern of demographic region in different decades is not uniform in the state; hence, in this section a comparative picture of (I.e. 1961, 1981 and 2001) spatial pattern of demographic regions is given.
In 1961 the very high developed population regions were found in south and in costal region and small pocket in south of southern maidan, and east of southern part and south of northern maidan and extreme west of north western part of the state. Those taluks which were in very high developed demographic regions category in 1961 almost all of them and some surrounding of taluks these taluks are in Very high developed demographic regions category in 2001, due to the development secondary and tertiary sectors.

An important and major change that has taken place between 1961 and 2001 is that the number of taluks in the range of very high developed taluks increased in south and north of malnad and few taluks in east of malnad, south of southern maidan and extreme east of south eastern part (Fig7.2) some of them were low developed in the decade of 1961.

In 1961, relatively high developed demographic regions were found in some part of southern maidan, northern maidan, costal region, in east of malnad and eastern part of the state. In 2001, this category of regions appear mainly in malnad region and in some part of southern maidan, in a very small pocket of central part and northern maidan of the state.

Comparing between 1961 and 2001, major changes that have taken place are in costal and malnad region. The costal region shows more of the relatively high developed demographic taluks in 1961 and more of very high developed demographic taluks in 2001. Similarly in the malnad high developed demographic region were not there in 1961. These areas show the very high and relatively high developed demographic taluks in 2001.

In 1961, moderateley developed demographic regions consisted of 8 taluks of malnad region, 14 taluks of southern maidan, 7 taluks in north eastern part, 10 taluks in northern maidan and 3 taluks in central part of the state. In 2001, this situation is slightly different. At this time 6 taluks are in malnad region, 18 taluks are in southern
maidan, 4 taluks in northeastern part, 10 taluks in northern maidan and 3 taluks in central part of the state.

In 1961, low developed demographic region was situated in all over the state, 20 taluks in southern maidan, 16 taluks in malnad region, 5 taluks in north eastern part, 7 taluks in northern maidan and 2 taluks in central part of the state. In 2001 these pattern shifted to 11 taluks in southern maidan, 3 taluks in malnad region, 2 taluks in northeastern part, 13 taluks in northern maidan and 2 taluks in central part of the state. Compared between 1961 and 2001 major changes have taken place in southern maidan and malnad region where low developed demographic taluks decreased to 11 taluks and 3 taluks and in northern maidan it’s increased to 13 taluks.

In 1961, very low developed demographic region was mainly in south and north of southern maidan and few taluks in malnad region, northeastern part, central part of the state and small pocket of north of northern maidan of the state. In 2001 this type of region was mainly in north eastern part, extreme south and north of southern maidan, small pocket of north western part, north of northern maidan, extreme east of south eastern part and central part of the state. Similarly major changes that have taken place are in northeastern part and east of south eastern part of the state, very low developed demographic taluks are more in 2001 compared with 1961 but in malnad region the number of very low developed demographic taluks has decreased.

**Demographic Regions of Karnataka: their share of Population and Area**

In 2001, 28.5 percent of the total population of the state is living in very high developed demographic region and it's covers 12.3 percent of the total area of the state (Table 7.7 and Fig 7.3) and this region includes 26 taluks of the state.

The very low developed demographic region covers about 24.0 percent of the total population and 34.5 percent of the total area of the state and this region is spread over 50 taluks. 12.6 percent of the total population of the state was living in the
relatively high developed demographic region of the state covering 14.8 percent of the total area of the state and this region covers about 26 taluks of the state. Moderately developed demographic region covers 19.8 percent of the total population and 20.1 percent of the total area of the state and this region is spread over 42 taluks. Low developed demographic region covers about 15.1 percent of the total population and 18.3 percent of the total area of the state and spread over 31 taluks.

Table 7.7 Karnataka State: Demographic Regions, Population and Area, 1961 and 2001

<table>
<thead>
<tr>
<th>Demographic Region</th>
<th>Percentage of population to the total population of the state</th>
<th>Percentage of area to the total area of the state</th>
<th>Number of taluks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high developed</td>
<td>15.9</td>
<td>28.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Relatively high developed</td>
<td>21.9</td>
<td>12.6</td>
<td>18.4</td>
</tr>
<tr>
<td>Moderately developed</td>
<td>22.6</td>
<td>19.8</td>
<td>24.0</td>
</tr>
<tr>
<td>Low developed</td>
<td>23.6</td>
<td>15.1</td>
<td>28.3</td>
</tr>
<tr>
<td>Very low developed</td>
<td>16.0</td>
<td>24.0</td>
<td>24.2</td>
</tr>
</tbody>
</table>

The pattern mentioned above was there in 2001 but was different from what it was in 1961. The percentage of area, population and number of taluks of Very high developed demographic region has increased in 2001 but it was low in 1961.

The table 7.7 and figure 7.3 A, B and C show the percentage of area, population and number of taluks of the state.
Fig 7.3 Percentage of total Population, total geographical area and Number of taluks in Karnataka- 1961 and 2001

A. Percentage of Total Population

1961 2001

B. Percentage of Total geographical area

1961 2001

C. Number of taluks

1961 2001

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The percentage of area, population and number of taluks of relatively high developed demographic region has decreased in 2001 but it was high in 1961. Moderately developed demographic region was slightly bigger in 1961 compared with 2001. Low developed demographic region has experienced drastic change in 2001 compared to what it was in 1961. Very low developed demographic region has become bigger in 2001 compared to 1961.