

## Development potentialities of towns: a case study of Ahmednagar District

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### Abstract

The present paper aims to evaluate the development potentialities of the towns of Ahmednagar district. The entire paper is based on secondary source of data. Data has been processed by applying quantitative techniques such as mean, standard Deviation, Centrality Index etc. For this research purpose a tahsil unit of urban centre is considered. A comparative rank order as per population and cumulative potentiality score reveals that Ahmednagar, Sangamner, Shrirampur, Rahuri and Kopargaon are stood first, second, third, fourth and fifth rank respectively.

*Key words* Town, Development potentiality, Quantitative evaluation, Centrality Index.

### Introduction

The concept of development of potentiality, used by S.K. Biswas<sup>1</sup> in for the study of the urban centres of Bijnor district of Uttar Pradesh. Here author considered 'development potentiality' in the sense concealed power of spatial, social and functional characteristics of towns *i. e.* nine variables denoted further, have been supportive their quantitative indication for the development.

As per 2001 census the urban population of Ahmednagar district is 803697 and it consists

of 19 urban centers within 9 tahsils. Here tahsil considered as a unit of urban centre. Various scholars has been worked on the functions and morphologies of towns and cities, as single entities view point, but there has been very rare studies about the behavioral pattern of the urban centers. So here an attempt has been made to analyze the development potentialities of the towns of Ahmednagar district with the help of 9 basic variables.

*Study area :*

Ahmednagar district has been selected

for the present investigation. It lies between 18° 2' N. and 19° 9' N. latitudes and 73° 9' and 75° 5' E. longitudes. As per 2001 census the population of district is 4040642 which is 4.17 per cent of the total population of Maharashtra. The district consist 14 tahsil of Akole, sanganner, kopargaon, Shrirampur, Nevasa, Shevgaon, Pathardi, Nagar, Rahuri, Parner, Shrigonda, Karjat, Jamkhed and Rahata. It consist 1587 villages and 18 towns in which 11 statutory towns and 7 census towns. Urban population have been found in only 9 tahsil and remaining 5 tahsil totally as a rural in character.

#### *Objectives :*

The basic objective of the paper is to investigate development potentialities of the towns and suggest viable and meaningful suggestion for planning of development of urban centers.

#### *Database and methodology :*

The study is mainly based on secondary source of data. The required essential data has been collected from the District Census Handbook, Ahmednagar-2001.

For the quantitative evaluation of the development potentialities of the towns, the spatial, social and functional variables are chosen. The following 9 variables are selected and values of them are considered as per 2001 census basis.

1. Number of residential houses per 100 persons.

2. Density of population
3. Percentage of literates to total population.
4. Percentage of working population to total Population.
5. Percentage of non-primary workers to total population.
6. Percentage of decadal variation of population. (1991-2001).
7. Centrality index.
8. Average number of urban centre.
9. The accessibility of towns.

Above 9 variables, out of them the values of first six are easily available at census Handbook. 'Centrality' used earlier by Christaller (1933), further it is modified by Dickinson (1932), Smailes (1944), Brush and Bracy (1955) and others who had taken into consideration the central functions and institutions as well.

For the 7<sup>th</sup> variable, say, 'Centrality index' of each town has been worked out by the formula which is adopted by S.K. Biswas<sup>1</sup> for the finding out centrality index of tahsils in Bijnor district of Uttar Pradesh. Here some modifications made by authors in the original formula of Biswas because, non availability of data in respect of industrial, commercial, transport and service workers. As per 2001 census the data regarding these type of workers replaced (considered) in together as Other Workers (OW) category. Data is not available of non-household workers separately so, it is considered as Primary workers. (Cultivators + Agricultural laborer). Following formula adopted for finding out Centrality Index is given as below.

$$C. I. = \frac{[ H_1 - ( P_1 \times DH/DP ) ] + Pr_1 + [ (Ow_1 - ( P_1 \times Dow/DP ) ]}{[ "H - ( " P \times DH/DP ) ] + "Pr + [ ("Ow - ( "P \times Dow/DP ) ]} \times 100$$

Where :

**C.I.** = Centrality Index.

**$\Sigma H$**  = Summation of  $H_1, H_2, H_3 \dots H_n$ .

**$\Sigma P$**  = Summation of  $p_1, p_2, p_3 \dots P_n$ .

**DP** = Total District population.

**$\Sigma pr$**  = Summation of  $Pr_1, Pr_2, Pr_3 \dots Pr_n$ .

**$\Sigma ow$**  = Summation of  $ow_1, ow_2, ow_3 \dots ow_n$ .

**$H_1$**  = Household industry workers.

**$P_1$**  = Population of a town.

**DH** = Total District Household industry workers.

**$P_{r1}$**  = Primary workers of a town.

**$Ow_1$**  = Other workers of a town.

**Dow** = Total District other workers.

Eighth variable *i.e.* 'Average size of the urban centers' has been find out by the following  **$S_j = TP/TN$**

Where :  **$S_j$**  is the size of urban centre for the tahsil.

**TP** is the total urban population of the tahsil.

**TN** is the total number of urban centres of the tahsil.

Finally cumulative scores are also prepared for all the towns for comparatively analysis of development potentiality.

## Result and Discussion

*Analysis of the development potentialities of the towns:*

It is reveals from below table 1 and fig. 1 that Ahmednagar, Shrirampur, Sangamner, Rahuri & Kopargaon are ranked first, second, third, fourth and fifth in terms of cumulative potentiality score. Ahmednagar is a district place therefore, has scored maximum in five of the indices viz., 'percentage of literates to total population', 'percentage of non-primary activities workers to total working population', 'percentage of decadal variation of population', 'Centrality index' and 'regional accessibility'.

However, it is essential to note here that Sangamner, Rahata and Kopargaon could not top in any of the variables. While Shrirampur reveal that highest score in two variables *i.e.* 'density of population' (persons per sq.km.) and Rahuri also top score in one variable *i.e.* 'percentage of working population to total population'. For different variables like number of residential houses per 100 persons highest score snatched by Jamkhed. Shrirampur shows highest score in 'an index of average number of urban centers'. Shrigonda and Pathardi also could not top score in any one variables<sup>2-3</sup>.

Table 2 clearly shows low, medium and high level of development potentialities of towns in Ahmednagar district. It is essential to note that levels of development potentialities of towns have been result of development in spatial, social and functional variables. Whereas, development of these variables are depends on physical, social, demographic, economic, educational, and factors.

### 1. Low development potentialities :

In this category include only one tahsil (11.11 %) of Shrigonda. It denotes below 453.97 cumulative score which is an indicator value

of low development potentialities of town. Actually Shrigonda fulfill with irrigation facilities for agriculture development and sufficient water supply for industries but, there is no attempted by any political leader for industrial development.

### 2. Medium development potentialities :

There are six tahsils (66.67 %), which are considered to be medium development potentialities. Sangamner Kopargaon, Rahata, Rahuri, Jamkhed, and Pathardi reveals ranges between 453.97 to 573.54 cumulative score. But it is essential to note here that Sangamner Kopargaon, Rahata and Rahuri are actually table 1 denotes higher development potentialities score than that of Jamkhed and pathardi. Because of these tahsils are bestowed with rich natural resources like plain topography, fertile soil *etc.* These tahsils have thus developed because of the natural advantages and intensive efforts and third is social, political and economic factors. Whereas, Jamkhed and pathardi having comparatively very low development due to poor soil, deficiency in water on hand and facilities and poor soil. There are no industrial development in both the towns due to remote location from big cities on one hand and scarcity of water on other hand.

### 3. High development potentialities :

Only two towns (22.22%) of Ahmednagar and shrirampur are included in this category. Both towns have more than 573.54 cumulative score value which is an indicator value of high development potentialities. Ahmednagar is a district headquarters and it highly balanced or highly diversified in terms of their (industrial,

trade & transport and other services workers) functions (Ramotra and Kambale 2007). It means that none there has workers more than 40 percent of the total workers in Ahmednagar. Shrirampur is situated in irrigated area with fertile soil and sugar industries and other industrial development.

Further, taking into account the different indices and their quantitative expression, one is able to interpret and analyse the urban capabilities of the towns which would not have been possible with the help of only one "Population" but potentiality score of other variables with population. Table 3 will exemplify it. Below table 3 reveals that there is 5 towns they didn't have any change attained rank with comparison of both population and cumulative potentiality score Viz. Ahmednagar, Shrirampur, Sangamner, Kopargaon and Jamkhed. It is observed that two towns have been Gain (+) in rank they are of Rahata and Pathardi while, two towns are Rahuri and Shrigonda losses their attaining rank.

It is pointed out from table 3 that the ranks attained by the towns are not absolutely identical for population and cumulative potentiality score. Actually the 'potentiality' score provide a much more helpful clue for the purpose of practical planning and development of the towns than population.

### Conclusions and Suggestions

It is concluded here that Ahmednagar is a district place therefore, has scored maximum in five of the indices. Tahsils situated in the northern part of district especially in Godavari (Mula-Pravara) basin they attained high cumulative potentiality score and found densely

Table 1. Actual values and standardized cumulative scores of the variables

| Sr No. | Towns      | Variables                                   |       |       |       |   |       |       |       |                                 | Cumulative scores |
|--------|------------|---|-------|-------|-------|---|-------|-------|-------|---------------------------------|-------------------|
|        |            | 1   | 2     | 3     | 4     | 5   | 6     | 7     | 8     | 9                               |                   |
| 1.     | Ahmednagar | i) 18.78                                    | 2839  | 88.1  | 33.13 | 93.95   | 96.3  | 61.8  | 3.12  | 23                              | 806.51            |
|        |            | ii) 92.60                                   | 43.52 | 100   | 81.50 | 100   | 100   | 9100  | 88.89 | 100                             |                   |
| 2.     | Sangamner  | i) 17.65                                    | 4207  | 86.4  | 32.20 | 87.55   | 65.8  | 12.91 | 1.17  | 12.5                            | 625.49            |
|        |            | ii) 87.03                                   | 64.50 | 98.07 | 79.21 | 93.19   | 94.95 | 20.86 | 33.33 | 54.35                           |                   |
| 3.     | Kopergaon  | i) 17.62                                    | 4031  | 79.5  | 32.11 | 69.80   | 28.1  | 8.06  | 2.76  | 10.5                            | 570.07            |
|        |            | ii) 86.88                                   | 61.81 | 90.24 | 79.00 | 74.29   | 40.55 | 13.02 | 78.63 | 45.65                           |                   |
| 4.     | Rahata     | i) 17.27                                    | 1280  | 81.3  | 36.69 | 68.50   | 36.6  | 6.14  | 2.63  | 5.00                            | 519.63            |
|        |            | ii) 65.16                                   | 19.62 | 92.28 | 90.26 | 72.91   | 52.81 | 9.92  | 74.93 | 21.74                           |                   |
| 5.     | Shrirampur | i) 18.37                                    | 6522  | 82.9  | 31.80 | 92.47   | 12.3  | 9.90  | 3.51  | 10.5                            | 740.73            |
|        |            | ii) 90.58                                   | 100   | 94.10 | 78.23 | 98.42   | 17.75 | 16.00 | 100   | 45.65                           |                   |
| 6.     | Pathardi   | i) 18.17                                    | 679   | 82.1  | 34.00 | 78.10   | 16.9  | 2.86  | 0.82  | 12.5                            | 466.69            |
|        |            | ii) 89.59                                   | 10.41 | 93.2  | 83.64 | 83.13   | 24.39 | 4.62  | 23.36 | 54.35                           |                   |
| 7.     | Rahuri     | i) 17.95                                    | 753   | 77.4  | 40.65 | 59.95   | 20.6  | 10.84 | 1.93  | 12.00                           | 505.92            |
|        |            | ii) 88.51                                   | 11.54 | 87.85 | 100   | 63.81   | 29.72 | 17.51 | 54.98 | 52.00                           |                   |
| 8.     | Shrigonda  | i) 17.69                                    | 307   | 79.9  | 38.80 | 44.70   | 21.6  | 10.94 | 0.62  | 12.5                            | 446.53            |
|        |            | ii) 87.23                                   | 4.71  | 90.70 | 95.45 | 47.58   | 31.17 | 17.68 | 17.66 | 54.35                           |                   |
| 9.     | Jamkhed    | i) 20.28                                    | 937   | 80.4  | 33.0  | 76.6  | -     | 8.82  | 1.14  | 15.0                            | 480.27            |
|        |            | ii) 100                                     | 14.37 | 91.26 | 81.18 | 81.53   | -     | 14.25 | 32.46 | 65.22                           |                   |
|        |            | Variables 1,2,3..... 9 are denoted earlier. |       |       |       | i) represents actual value and<br>ii) standardized cumulative scores. |       |       |       | Mean = 573.54<br>S. D. = 119.57 |                   |

Table 2. Levels of development potentialities of towns

| Sr. No | Levels of development potentialities of towns | Range scores of Tahsils | No.of Tahsils(%) | Name of Tahsils   |
|--------|---|-------------------------|------------------|---|
| 1      | Low<br>(Less than Mean – SD)                  | Below 453.97            | 01 (11.11)       | Shrigonda.  |
| 2      | Medium<br>(Mean – SD to Mean)                 | 453.97 to 573.54        | 06 (66.67)       | Sangamner, Kopergaon, Rahata, Rahuri, Jamkhed, Pathardi |
| 3      | High<br>(More than Mean)                      | Above 573.54            | 02 (22.22)       | Ahmednagar and Shirampur                                |
| -      | Total District Average/<br>Mean               | 573.54                  | 09 (100.00)      | Ahmednagar district.                                    |

Table 3. Variation of rank order of the towns of ahmednagar district

| Sr.No. Name of town | Rank as per population (a) | Rank of per cumulative potentiality score (b) | variation in rank from (a) to (b) |
|---------------------|----------------------------|---|-----------------------------------|
| 1 Ahmednagar        | 1                          | 1   | No Change                         |
| 2 Shrirampur        | 2                          | 2   | No Change                         |
| 3 Sangamner         | 3                          | 3   | No Change                         |
| 4 Kopargaon         | 4                          | 4   | No Change                         |
| 5 Rahuri            | 5                          | 6   | Change -1/loss                    |
| 6 Rahata            | 6                          | 5   | Change +1/Gain                    |
| 7 Jamkhed           | 7                          | 7   | No Change                         |
| 8 Shrigonda         | 8                          | 9   | Change -1/loss                    |
| 9 Pathardi          | 9                          | 8   | Change +1 /Gain                   |

populated area. Due to development of agriculture especially sugarcane because of there are plain area, fertile deep alluvial soil, irrigation facilities available in that area. Result is that sugar industries are well developed. Whereas, tahsils situated in the southern and eastern part of district experienced scarcity of water for agriculture and sometimes drinking purposes also. Therefore, Jamkhed, Shrigonda and Pathardi all being lower ranks either in 'population size' and 'cumulative potentiality score'. It is essential to note here that there is need of proper planning for the development of these lower ranked towns. Whenever, preference can be given firstly to infrastructural facilities<sup>4</sup>.

The last vital task is to critically examine the performances of the demoted towns of Rahuri and shrigonda to put suggestions for exaltation of their standards. Similarly, the upgraded towns should also be given proper

incentive for further enhancement of their achievements which would be beneficial for their development as well as for the district.

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