
Research Papers



CHANGING PATTERN OF POPULATION DENSITY IN SATARA DISTRICT OF MAHAASHTRA

Barakade A.J.

Department of Geography
Karmaveer Bhaurao Patil Mahavidyalaya, Pandharpur
Dist-Solapur, 413304

Abstract

Changing population density is often ignored in studies of population growth and population transfer in the Satara district. The population density of Satara district rose from 137 in 1961 to 268 in 2001. The initial provisional data suggest a density of 287 in 2011 compared to 268 of 2001. The present paper shows that there is a complex relationship between patterns of population growth and density increase by the Satara district.

The largest gains in density are in the district of the Karad, Satara, and Phaltan tahsils. Analysis of eleven tahsils with the greatest increases in density between 1961 to 2001 shows that they are well distributed across the Satara district including the urban center areas. In general the density populated in Satara district and tahsilwise are becoming more densely populated concept of were for to as densification. In this paper discussed the pattern of spatial distribution of population density shows the diagrams, graphs, maps, and tables were interpreted in the light of population density.

Keywords:

Density, Population, Growth, Pattern, Change.

Introduction:

One of the important indices of population concentration is the density of population. It is defined as the number of persons per square kilometer. The population density of

India in 2001 was 324 persons per square kilometer, which means that now 57 more people live in a square kilometer area in the country than the number that lived in a decade ago. The density of population was increased in all States and Union territories between 1951 to 2001. Among major States with a population density of 903 square kilometer in 2001. Bihar is now the second highest densely populated State pushing Kerala to the third place. High increase in the density of population is a great concern as it puts immense pressure on our natural resources. Also it may be the quality of life. Due to differences in climatic conditions, availability of resources, agriculture, industrialization, educational, capital city States and Union territories of our country largely varied in terms of density. According to the census 2001 the population of Maharashtra was 96,752,247. The population of the State is the second in the country, after Uttar Pradesh and ranks 12th in the worldwide ranking of most populated states of the

world. The average population density was during the year 2001 in Maharashtra 322.5 square kilometer.

The term density of population was used by Henry in 1837, while preparing railway maps. This is ratio between population and area. This is used as an indicator to measure of concentration of population. While calculating density total population taken as numerator while total area is taken as denominator. Satara district population constituted 2.67 per cent of total Maharashtra population. Population density is the average number of people per square kilometer. It is way of measuring population in district and shows where an area is sparsely or densely populated. Density of population helps us an understanding nature of distribution of population. It is useful in several other ways. It also becomes easier to know possibilities for development for a region. It indicates nature of balance between population of the region and it's natural resources. If density of population is more than what the natural resources of the region can support, then such a situation encourage migration? This view in mind density of population studies in the Satara district.

Study Area:

The Satara district is situated in west part in Maharashtra state. This district consists eleven tahsils covering 1739 villages. The total area extent is of 10,484 sq. km. extending from 17° 5' to 18° 11' north latitudes and 73° 33' to 74° 54' east longitudes. This district is confined by Pune district to north, Solapur district to east, Sangli district to south and

Ratanagiri district and Raigarh districts to west (Fig.1). Satara district has typical landscapes due to variations in relief, climate and vegetation. The variation of

relief ranges from the pinnacles and high plateau of the main Sahyadrians range having heights over 1200 meters above mean sea level to the subdued basin of Nira river with an average height of about 600 meters above mean sea level. The climate ranges from the rainiest in the Mahabaleshwar region which has an average annual rainfall of over 6000 mm to the driest in Man, Phaltan, Khandala and Khatav tahsils where the average annual rainfall is about 500 mm. Satara is predominately a rural district of the 23 inhabited places in the district, 1739 are villages and 15 towns including the city of Satara. The distribution of the total district of population in the urban and rural areas is 3,98,000 and 24,11,000 respectively. It will try to changing pattern of population density in Satara district.

Objectives:

The present study has been undertaken with the following specific objectives.

1. To study the arithmetic density of population in the district.
2. To find out the changing pattern of population density in study region.

Data Base and Methodology:

Present paper is based on the secondary sources data mainly collected from District Census Handbooks, Socio-Economic Abstract etc. various statistical techniques are used in the present paper. To know the demographic pattern of the study area. Population density is a measurement of the number of people in an area. It is an average number population density is calculated by dividing the number of people by area. Population density is usually shown as the number of people per square kilometer. The period from 1961 to 2001 is selected for the observation of pattern of population density changes. The data was tabulated analyzed and represented in the form of cartographic, statistical diagrams and maps. Population density is calculated using the following formula.

Formula =

$$\text{Population Density} = \frac{\text{Total Population}}{\text{Area in square kilometer}}$$

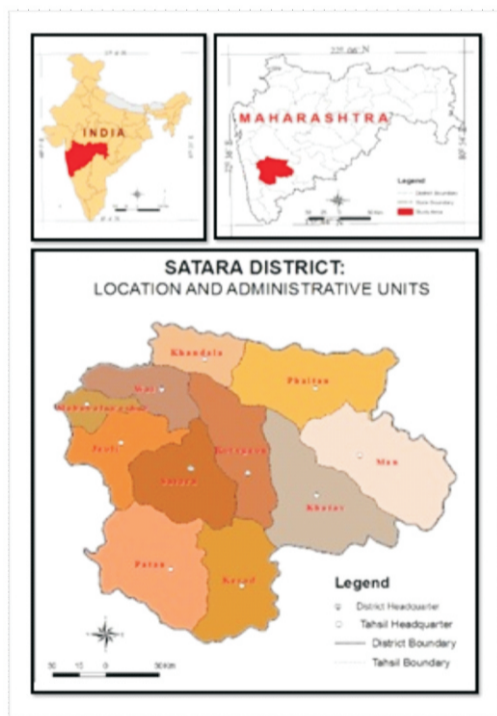


Table No.1
Satara District: Tahsilwise Population Density (Density per sq.km.) (1961-2001)

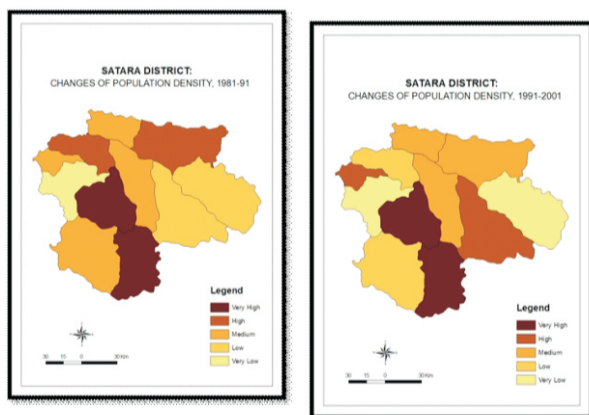
| Sr.No | Tahsil | Area (sq.km) | 1961 | 1971 | 1981 | 1991 | 2001 |
|-------|---------------|--------------|------|------|------|------|------|
| 1 | Satara | 915.31 | 209 | 262 | 320 | 403 | 516 |
| 2 | Wai | 539.31 | 176 | 211 | 241 | 282 | 306 |
| 3 | Khandala | 526.53 | 120 | 137 | 157 | 192 | 229 |
| 4 | Koregaon | 944.34 | 147 | 174 | 202 | 238 | 275 |
| 5 | Phaltan | 1180.55 | 119 | 158 | 190 | 231 | 261 |
| 6 | Man | 1440.06 | 69 | 84 | 101 | 128 | 138 |
| 7 | Khatav | 1318.67 | 118 | 135 | 154 | 178 | 231 |
| 8 | Karad | 1069.48 | 235 | 291 | 358 | 430 | 561 |
| 9 | Patan | 1330.09 | 136 | 156 | 175 | 206 | 226 |
| 10 | Jaoli | 892.80 | 90 | 103 | 118 | 132 | 144 |
| 11 | Mahabaleshwar | 226.10 | 108 | 134 | 164 | 197 | 245 |
| | | 10484 | | | | | |

Source: Census Handbook of Satara District and Socio-Economic Statistical Abstract

Table No 2
Changes of Population Density

| Sr.No | Tahsil | 1961-1971 | 1971-81 | 1981-91 | 1991-01 |
|-------|---------------|-----------|---------|---------|---------|
| 1 | Satara | 53 | 58 | 83 | 113 |
| 2 | Wai | 35 | 30 | 41 | 24 |
| 3 | Khandala | 17 | 20 | 35 | 37 |
| 4 | Koregaon | 27 | 28 | 36 | 37 |
| 5 | Phaltan | 39 | 32 | 41 | 30 |
| 6 | Man | 15 | 17 | 27 | 10 |
| 7 | Khatav | 17 | 19 | 24 | 53 |
| 8 | Karad | 56 | 67 | 72 | 131 |
| 9 | Patan | 20 | 19 | 31 | 20 |
| 10 | Jaoli | 13 | 15 | 14 | 12 |
| 11 | Mahabaleshwar | 26 | 30 | 33 | 48 |

Source: Compiled By Researcher



Changes of the Population Density and Trend in the Satara District:

The data obtained on the population density of Satara district for the seven years viz; 1951 to 2011 were analyzed by simple tabular method. The proportions were estimated for each of the above years to know the changes in the population density of the district for period under the study. The least square method, which corresponds to the problem of finding a line or curve that best fits a set of data. In the standard formulation, a set of N pairs of observations {Y_i, X_i} is used to find a function giving the value of the dependent variable (Y) from the values of the

independent variable (X). With one variable and a linear function, the prediction is given by the following formula.

Formula =

$$Y = a + bx$$

$$a = \frac{\sum y}{n}$$

$$b = \frac{\sum xy}{\sum x^2}$$

Table No 3
Satara District: Trend of Population Density

| Sr.No | Year | Population Density | Trend Value |
|-------|------|--------------------|-------------|
| 1 | 1951 | 113 | 106.18 |
| 2 | 1961 | 139 | 138.36 |
| 3 | 1971 | 155 | 170.54 |
| 4 | 1981 | 198 | 202.71 |
| 5 | 1991 | 242 | 234.89 |
| 6 | 2001 | 285 | 267.07 |
| 7 | 2011 | 287 | 299.25 |

Source: Compiled By Researcher

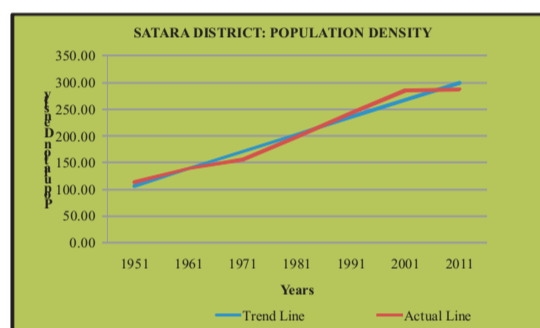


Fig.6

As the result of the gradually in the population density change. During the period 1951-2011, the net addition to the population of density of the Satara district was around 287 square kilometer. Table No 3 and Fig.6 reveals considerable geographic variation in the population density growth across the tahsils of the Satara district. Projecting future population density of the district on the basis of above equation indicates that trends observed during the six decades are continued in the near future. The application of the dynamic least square model also suggests that the population density of the Satara district is increasing. The above figure of the population density is indicated curve trend line and actual line is increasing then, it is clear that rapid population density growth.

Conclusion:

The population density of Satara district is constantly changing. On the basis of above results and discussion it can be concluded that Satara district Karad and Satara these two tahsil of district are growing population density at the faster rate than Phaltan and Wai tahsil. There effect on the difference in the density of population. Rate of increased density of population is higher in some

tahsils like Wai, Koregaon and Khatav tahsils and it was low rate of changes of density in the hilly area of Patan tahsil and drought prone area Man tahsil. In this way Satara district is in a high grip of population density, whereas socio-economic, natural resources are at per to imbalance the population density in rural and urban parts of the district. These population density changes represent people's opportunities of employment, educational facilities, industrial development, economic development, social environment health and recreation, political, social institutes of education and the exercise of residential preferences.

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