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## RESEARCH ARTICLE

### IDENTIFYING SPATIO-TEMPORAL PATTERN OF LITERACY IN JALGAON DISTRICT MAHARASHTRA STATE

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#### ABSTRACT

Literacy is a sensitive indicator of cultural advancement of an area. It develops the personality and rationality of individuals, qualifies them to fulfil certain economic, political and cultural functions and, thereby, plays an active part in the socio-economic transformation of a society. According to the 2011, Census of India, Literacy has been defined as "A person aged seven and above, who can both read and write with understanding in any language, is treated as literate". Lack of literacy breaks the economic, political and all development process of that society or a region. Therefore, present study is focus on identifying spatio-temporal pattern of literacy in Jalgaon District. This study is to examine the tahsil-wise decadal literacy rate of Jalgaon District during 1991 to 2011. Jalgaon District is socio-economically one of the developed districts in Maharashtra. It has attained a relatively good position in literacy as compared to other districts of Maharashtra in 2011 i.e. Aurangabad Beed, Dhule, Jalna, Latur, Nanded, Parbhani, Osmanabad, Solapur and Nandurbar Districts.

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## INTRODUCTION

Literacy and education plays a vital role in the socio-economic transformation of any region (Sundaram, 1985). The level of education in a community is a good measure of its progress towards modernization. Generally, the higher literacy is a good indicator for the sound economy as well as healthy society. The lower the literacy is hurdle for not only the economy but also the society. Keeping this statement the attempt has been made to identifying spatio-temporal pattern of literacy and to judge the level of socio-economic dimensions of the study area. Today, the literacy is not only sticks its real meaning but also enhanced its level of understanding the society not only its present situations but also capable to assess the future generations through the proper education (Mulimani and Pujar, 2015). The literacy rate of India in 2011 is 74.04 per cent in the world. India literacy is not good comparison to other developed countries of the world. This is big problem to India and this is challenge for Indian government (Shah, 2013).

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The male literacy rate is 82.14 per cent and female literacy rate is 65.46 per cent. Kerala have a highest literate state of India. Kerala 93.91 per cent, Mizoram 91.58 per cent, Tripura 87.75 per cent, Goa 87.40 per cent, Chandigarh 86.43 per cent, Delhi 86.34 per cent, Himachal Pradesh 83.78 per cent and Maharashtra is good literacy rate recorded 82.91 per cent in 2011. Maharashtra is the third largest state regarding the geographical area and second largest state in respect of population in India (Mundhe and Jaybhaye, 2014). According to 2011, Census of India, the literacy rate in Maharashtra has increased from 27.91% per cent in 1951 to 82.91% per cent in 2011. Maharashtra revealed high literacy rates as compared to its neighbouring states of Gujarat, Karnataka, Madhya Pradesh and Rajasthan. The levels of literacy vary from district to district in Maharashtra (Bhakare and Hudale, 2011). The highest literacy rate is 90.90 per cent in Mumbai Suburban District. The lowest literacy rate is registered in 63.04 per cent in Nandurbar District during the year of 2011. Present study is focus on identifying spatio-temporal pattern of literacy in Jalgaon District from 1991 to 2011. Jalgaon District is socio - economically one of the developed districts in Maharashtra. It has attained a relatively good position in literacy (79.32%) as compared to other districts of Maharashtra in 2011, i.e. Beed,

Dhule, Jalna, Latur, Nanded, Parbhani, Osmanabad, Solapur and Nandurbar Districts.

## Objective

The main objective of the present research work is to identify the spatial pattern and temporal trend of literacy in Jalgaon District from 1991 to 2011.

## Study area

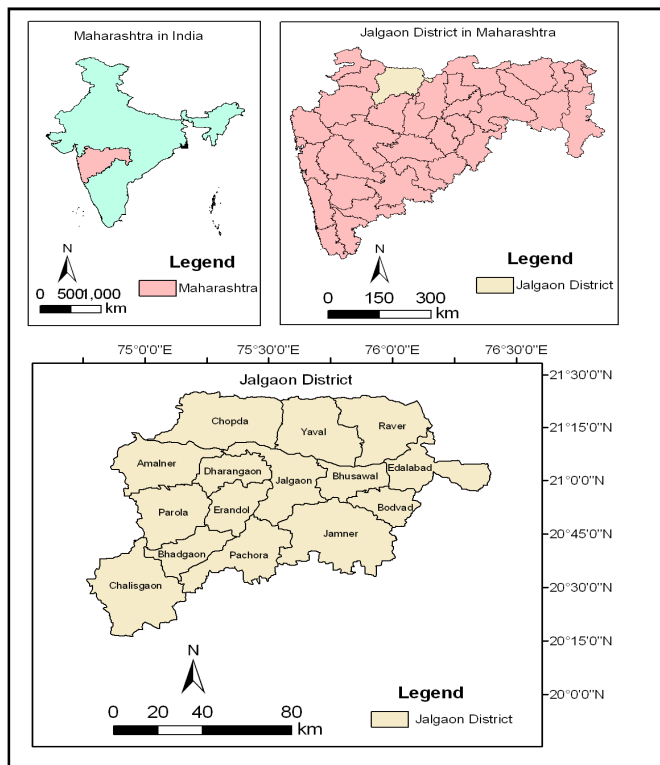


Fig. 1. Location map of study area

The region selected for the study is Jalgaon district of Maharashtra State. In Jalgaon district there are 15 taluqs these are selected for the present study. Looking into its delicate ecology and poor socio- economy, the study region is one of the most vulnerable regions of Maharashtra State. The topography of the region is hilly, plateau, undulating and rolling. It covers an area of about 11765.00 km<sup>2</sup>. It lies between 20011' to 21013' North latitudes and 74046' to 76024' East longitudes (Fig.1). Average rainfall is 682.8 mm in the said area. Also, temperature and relative humidity varies 18°C to 35°C and 45 % to 72 % over the years respectively.

## Database and methodology

This study is based on secondary data obtained mainly from the publications of Census of India. The main census publications of different periods of time from where data has been collected include the General Population Tables, Socio Cultural Tables, District Census Handbooks of Jalgaon District, Primary Census Abstract, Final Population Tables etc. In addition to the sources indicated above, information and data have been collected from the Gokhale Institute of Politics and Economics, Pune and Statistical Department, Jalgaon District. A large number of books, research studies including dissertations, published and unpublished works from different sources have been studied thoroughly for the present study. Relevant web sites were visited from time to time for authentic

information and data. According to 2011, Census of India the total population of Jalgaon District was 2891882 in which male and female were 1629223 and 1262659 respectively. Jamner is the largest taluqa by area with 1349.68 square kilometres while Bodwad is the smallest Taluqa with 372.31 square kilometres in the district. It is bounded on the east by Buldhana District, Aurangabad District to the north-east side, Beed District to the east, Osmanabad and Solapur District to the south. The present research work is an attempt to identify the trends and to explain the regional variations in literacy patterns in Jalgaon District during 1991-2011. Taluqa has been considered to be the most appropriate unit of study for which data are available. There were 15 taluqs in the district in 2011. At the time of 1971 census, literacy rates were calculated by taking the total population which included children below 7 years; but in 1991 and in the 2001 census, population below 7 years has been excluded from the total population to calculate these rates. The formula for computing crude literacy rate and effective literacy rate are as follows (Trewartha, 1953; Clarke, 1965; Ghosh, 1998; Chandana, 2004).

$$\text{Crude Literacy Rate} = \frac{\text{Number of literate person}}{\text{Total Population}} \times 100$$

$$\text{Effective Literacy Rate} = \frac{\text{Number of Literate persons aged 7 and above}}{\text{Total Population aged seven and above}} \times 100$$

## RESULTS AND DISCUSSION

### Spatio-Temporal Variation of Literacy in India, Maharashtra and Ahmednagar

India is the second largest country after China in population and is projected to cross China's population with 1.6 billion by 2050. The total number of population has increased from 23.84 crores in 1901 to 121 crores in 2011 (Mundhe and Jaybhaye, 2014). Whereas literacy rate of India has increased from 28.3 percent in 1961 to 74.04 percent in 2011 (Table 1). India's literacy rate at the time of independence was mere 14 percent, after 1991, difference of literacy rate from 1991 to 2001 was near about 13 percent that is highest among all last five decades. Over the years, literacy rate has been increasing but with varied rates in different states namely like Kerala and Mizoram well above national average and Bihar with a depressing rate of 63.8 percent. Literacy in Maharashtra was never below the national average during the period 1961-2011 due to improvement of educational facilities especially in the growing rural areas. In Maharashtra, literacy rate improved from 35.08 percent in 1961 to 82.91 percent in 2011 but there were large regional variations. As per 2011, Census of India, the highest literacy rate recorded such as Mumbai Suburban (90.9%), Nagpur (89.52%), Mumbai City (88.48%) and Amravati (88.23%) Districts. The very low literacy rate observed in the Nandurbar (63.04%) and Gadchiroli (70.55%) Districts of Maharashtra due to large concentration of tribal population, inadequate education facilities, rugged topography and difficult terrain as compared with the rest of the state. Literacy in Jalgaon District was never cross the state average from the period of 1961 to 2011 (Table 1). In 1961, there were only 32.41 percent literate person, out of them 39.36 percent was male literacy and 13.02 percent was female literacy. However, after 1991, 2001 and 2011 literacy rate was increased rapidly by 61.90 percent, 73.49 percent and 77.34 percent respectively. The male and female literacy also

increased in last three decades. According to 2011, Census of India, the highest literacy rate observed in Bhusawal (86.27%) Tehsil due high degree of industrialization and urbanization and lowest literacy rate was recorded in Chopda (72.48%) and Erandol (74.11%) Tehsil due to lack of educational facilities, industrialization, and urbanization. (Table 2).

**Table 1. Trend of Literacy in India, Maharashtra and Jalgaon from 1961-2011**

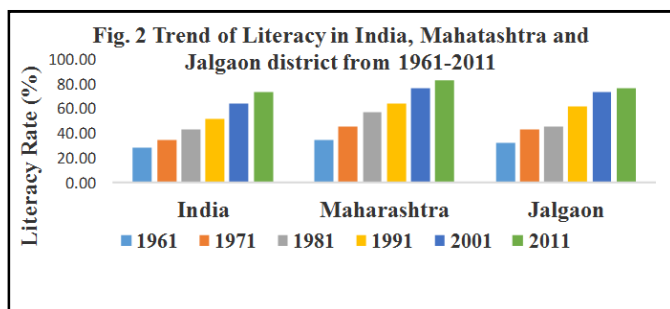
Census year	India	Maharashtra	Jalgaon
Literacy Rate (%)			
1961	28.30	35.08	32.41
1971	34.45	45.77	43.10
1981	43.57	57.24	45.71
1991	52.21	64.87	61.90
2001	64.83	76.62	73.49
2011	74.04	82.91	77.34

Source: Census of India, Census Handbook of Jalgaon district 1961-2011

**Table 2. Tahsil-wise Literacy in Jalgaon District from 1991- 2011**

Sr. No	Name of Tahsil	Total Literates (%)		
		1991	2001	2011
1	Amalner	66.22	74.60	78.52
2	Dharangaon	62.13	72.90	77.03
3	Parola	54.57	71.40	75.16
4	Erandol	60.43	71.70	74.11
5	Chalisgaon	61.34	74.70	75.59
6	Bhadgaon	61.12	74.30	76.13
7	Pachora	62.13	73.60	75.54
8	Jamner	56.97	70.20	74.86
9	Muktainagar	55.12	71.40	75.06
10	Raver	63.80	74.00	77.38
11	Yawal	65.78	70.00	78.33
12	Chopda	59.53	68.60	72.48
13	Bhusawal	75.64	79.20	86.27
14	Jalgaon	72.52	82.40	84.35
15	Bodwad	51.23	73.30	79.32
	Region	61.90	73.49	77.34

Source: Census Handbook of Jalgaon district 1991-2011



### Spatial Patterns of Literacy in Ahmednagar District: 1991-2011

The present research work is an attempt to identify the spatial pattern of literacy rate in Jalgaon District during 1991- 2011. Tehsil has been considered the most appropriate unit of for analysis of available data. In Jalgaon District, there were 15 tehsils in 2011. There are five types of areas have been identified for literacy rate based on district average as given below.

1. Region of Poor Literacy Rate (below 60%)
2. Region of Very Low Literacy Rate (below 60 - 65%)
3. Region of Low Literacy Rate (65 - 70 %)
4. Region of Moderate Literacy Rate (70 - 75 %)
5. Region of High Literacy Rate (75 - 80 %)
6. Region of Very High Literacy Rate (Above 81%)

### Region of Poor Literacy Rate (below 60 %)

In 1991, the literacy rate was less than 65 percent found in Bodwad (51.23%), Parola (54.57%), Muktainagar (55.12%), Jamner (56.97%) and Chopda (59.53%) mainly due to high proportion of rural population and lack of irrigation facilities, drought prone area, less productivity of the soil and socio-economic development (Fig. 2). In 2001 and 2011, Jalgaon District there are no single tahsil having less than 65 percent literacy in this category.

### Region of very Low Literacy Rate (60 - 65%)

In 1991, the literacy rate between 60 - 65 percent observed in Erandol, Bhadgaon, Chalisgaon, Dharangaon, Pachora and Raver because of poor education facilities like nursery, primary, secondary, higher secondary schools and colleges. In 2001, there were only two tehsil observed in this category namely Chopda (68.60%) due to hilly region and concentration of tribal population. However, in 2011 there was no single tehsil in this category.

### Region of Low Literacy Rate (65 - 70 %)

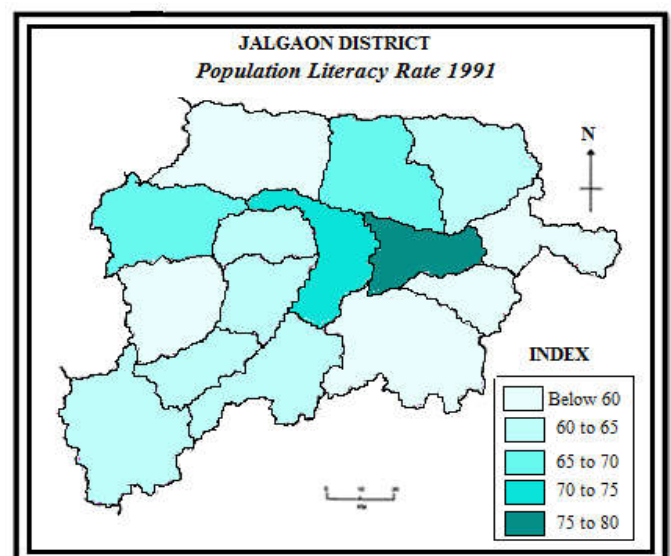
Low literacy rate is observed in Yawal (65.78%) and Amalner (66.22 %) tahsil in 1991. As per 2001, Census of India there were two tehsils under this categories like Yawal and Chopda tehsils (Fig. 2). Also during 2011, none of the tehsils observed in this category.

### Region of Moderate Literacy Rate (70 - 75 %)

Moderate literacy rate is found in Jalgaon tahsil (72.22%) in 1991. As per 2001 Census of India, there were majority of tehsils under this categories like Amalner, Bhadgaon, Raver, Pachora and Dharangaon (Fig. 3). Also during 2011, Chopda, Jamner and Erandol tehsils found in this category.

### Region of High Literacy Rate (75 - 80 %)

Jalgaon District is predominantly developed in character, where agricultural and industrial development is at its peak, which is reflected in the level of literacy.



**Fig. 3. Pattern of Literacy in Jalgaon District, 1991**

Educational status is very strong in District because educational facilities are available for playgroup to traditional, medical, engineering, agricultural colleges as well as universities. Out of 15 tehsils 1 tehsil i.e. almost 60 percent were in the region of high literacy rate. In 1991, there was only Bhusawal (75.64%) tehsil found high literacy rate (Figure 3). In 2001, Bhusawal and Jalgaon tehsils were added (Figure 4). During 2011, Parola (75.16%), Dharangaon (77.03%), Amalner (78.52%), Chalisgaon (75.59%), Bhadgaon (76.13%) and Pachora (75.54%) tehsils are observed high literacy rate due to better irrigation facilities as compare to other tehsils and agricultural and industrial development.

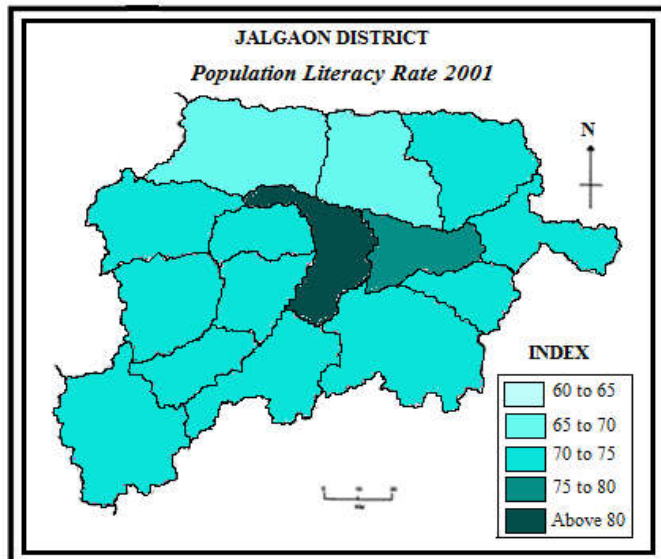


Fig. 4. Pattern of Literacy in Jalgaon District, 2001

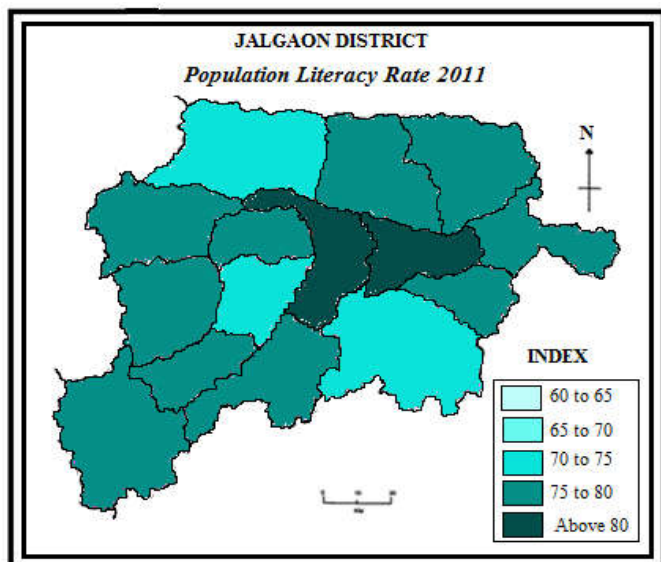


Fig. 5. Pattern of Literacy in Jalgaon District, 2011

#### Region of Very High Literacy Rate (above 81%)

During 2001 and 2011, only one Bhusawal tehsil is observed in very high literacy rate. The average literacy rate is 80.22 percent in 2011 (Table 2). Out of them 88.81 percent male and 71.15 percent female is literate. The tehsils Bhusawal and Jalgaon tehsils shows very high literacy rate than the average literacy rate of the district. Fig. 5 show that, the highest literacy rate in recorded in Bhusawal (86.27%), tehsil in 2011 because

the maximum population lived in the Bhusawal urban sector, followed by Jalgaon (84.35%). In the above tahsils, the literacy rate is high due to increasing educational facilities, higher urbanization, industrial development, irrigation facilities, commercial agricultures and the development of transportation facilities in the surround area.

#### Conclusion

India, Maharashtra and Jalgaon District have witnessed positive and significant increase in literacy in period of 1961 to 2011. After independence period witnessed out character growth rate because of proper planning and implementation efforts of Government and Non-government organizations (NGOs). Spatio-temporal pattern of literacy discloses a progressive but unequal trend for all the tehsils in the study area. The tahsil in the central prosperous belt denoted very high literacy rate, while eastern and western side tehsils having geographical barrier and concentration of tribal population witnessed poor literacy rate. This kind of disparity in the field of literacy is serious problem in the study area, which needs an immediate attention and long-term action plan. In the context, the result of the present research work proves of immense importance of planners, researchers, and administrator, educationist and decision makers.

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