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RESEARCH ARTICLE

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SPATIAL PATTERNS OF LITERACY DIFFERENTIALS IN AJMER DISTRICT (2011): A TEHSIL LEVEL ANALYSIS

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ABSTRACT

The Literacy is a crucial factor in the social, economic, and personal development of individuals. It contributes to better health, productivity, income, and overall quality of life, as well as increased participation in community activities. Education also introduces new ideas for societal development and personal growth. The disparities between urban and rural areas are largely due to the varying rates of change in towns and villages. Literacy, like other innovations, originates in urban areas and spreads to rural regions. This study focuses on the Ajmer region of Rajasthan, which has a population of about 2583052 people, and a literacy rate slightly above the state average. The study utilizes data from the 2011 Indian census and analyses literacy patterns and differentials, including male-female and urban-rural differences. The unit of analysis is the tehsil, and the study aims to identify the differential and composite indices of literacy development in the region. In 2011, the literacy rate of the Ajmer region was 69.33 percent. However, significant gaps exist between male and female, as well as urban and rural literacy rates in the region. The study seeks to identify the factors contributing to these disparities and propose strategies for improving literacy rates across the region.

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INTRODUCTION

In contemporary society, literacy and education are vital for achieving sustained improvements in well-being and promoting social, economic, and political inclusion. Education is a critical tool for integrating individuals who may otherwise be excluded from mainstream society and helps individuals improve their personal endowments, build capability levels, overcome constraints, and enlarge their set of available opportunities and choices for sustained development. For a nation, literacy and education are considered the primary driving force of development. Mahatma Gandhi believed that education's purpose is to establish a non-violent, non-exploitative social and economic order, and education is the highway to that goal. Despite India's significant focus on education since its independence, earning quality has always been a significant challenge for the government. In India, the definition of literacy, according to the Indian Census, is a person who can read and write a simple message in any language with understanding. The country is still amid its literacy transition, and while India's literacy rates are low, they are improving. Many studies have highlighted the importance of education for both economic and social benefits. For example, Hazra (1997) compared the performance of major regions in female literacy worldwide and pointed out the low position of South Asian countries in this regard. The author stressed the need to break down the vicious circle of female illiteracy, poverty, and low status in society.

Gosal's (2001) district-wise census data-based detailed study on "Spatial dimensions of literacy in India" indicated that there has been little change in the regional patterns of literacy in the country from 1961-2001. However, the rural-urban and male-female differentials in literacy rates have significantly narrowed over these years. The male-female differential in literacy rate showed a significant inverse correlation with the general literacy rate. Yadav, Jetwal and Khan (2018) analysed the spatial patterns of literacy differentials in Hadauti region on tehsil level and measured the real development of literacy by composite development method.

Objectives of the Study

- Examine the literacy rates and differences between male and female in the study area.
- Examine the differences between urban and rural literacy.
- Examine the differences between SC and ST populations.
- To assess the actual state of literacy development in the research area.

All of this has been done regarding the tehsils of Ajmer district. Tehsil-level information on literacy by religion, caste, and age is not made public or readily accessible. As a result, the focus of the current research is on the analysis of regional aspects of literacy disparities by area, residence, and sex. Such research is expected to shed light on

the levels and regional differences in both horizontal and vertical literacy inequalities. The author has calculated the statistics for each of the 16 tehsils. To plan for the overall growth of the people in the area, we need to comprehend all of this.

METHODOLOGY

For this research article, the tehsil has been selected as the appropriate unit of study. Secondary data from various reliable government sources have been utilized as the primary source of information. The data for the totals, males, females, and population residing in rural and urban areas at the tehsil level has been collected from the Census of India (2011) General Population Totals, Primary Census Abstract, Rajasthan. The author has calculated the statistics for each of the 16 tehsils as the published data is only for 9 tehsils. Different scholars have employed various techniques to measure the differentials or inequality in literacy rates between two relevant population groups. Gosal (1964) calculated the differential by computing the ratio between the two groups. Chitnis (1972 and 1974), Banerjee (1975), Nain (1988) utilized the simple technique of subtracting one variable from another. Additionally, Naik (1971), Sen (1973), Krishan and Shyam (1978), and Raza and Aggarwal (1986) have developed novel techniques for calculating such differentials. The following formula as used by Krishan and Shyam has been used in the present analysis.

$$DI = \frac{X_2 - X_1}{T}$$

Where, DI = Differential Index

X_2 = Literacy Percentage of Males, Urban population

X_1 = Literacy Percentage of Females, Rural population

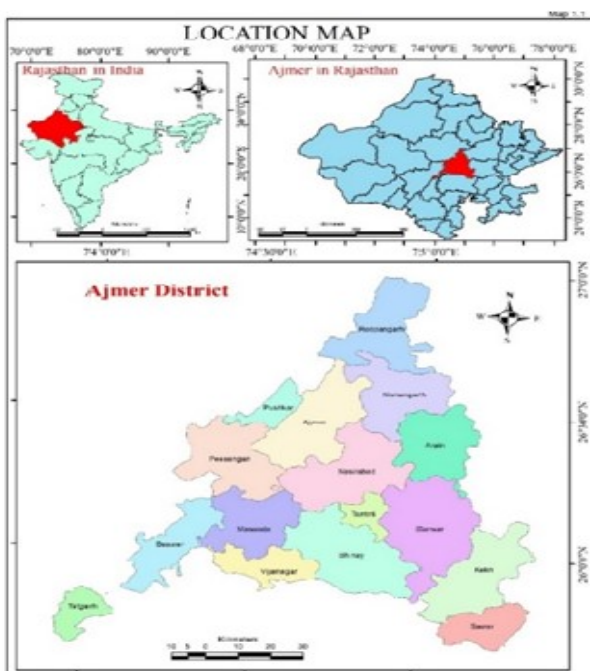
T = Literacy Percentage of total population

To measure the real development of literacy following formula is used.

$$\text{Composite Index of Development} = \frac{\text{M-F differentials} + \text{R-U differentials} + \text{Caste differentials}}{\text{Total Literacy Rate}}$$

M-F differentials + R-U differentials + Caste differentials

Study Area: Ajmer district is situated in the centre of Rajasthan and surrounded by Jaipur and Tonk district in the East and Pali in the West. Nagaur district touches its north boundary while Bhilwara district is in the South. The shape of the district is triangular.

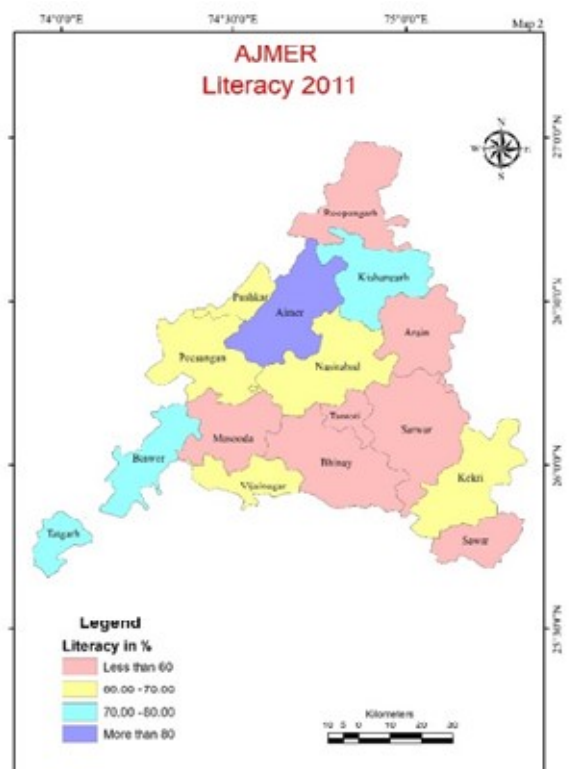


The district lies between 26025' North to 26029' North latitudes and 74037' East to 74042' East longitudes. Total area of Ajmer district is 8481.40sq. Kms. Ajmer district is sub divided into 13 sub-divisions

and comprises of 16 tehsils Ajmer, Pushkar, Nasirabad, Masuda, Vijainagar, Beawar, Tatgarh, Bhinay, Sarwar, Tantoti, Peesangan, Kekri, Sawar, Arain, Roopangarh and Kishangarh. Overall population of Ajmer district is 2,583,052 in 2011. Rural and urban population of the district is 1,547,642 and 1,035,410 people. The literacy rate of Ajmer district as per 2011 census is 69.33 percent while male literacy is 83.93 percent and that of female is 56.42 percent.

Spatial Pattern of General Literacy Rate: From the table 1, it can be observed that the highest literacy rate is in Ajmer with 81.41%, followed by Kishangarh with 72.06%. The lowest literacy rate is in Tantoti with 50.54%, which is significantly lower than the average literacy rate of the country. Most of the tehsils in the table have a literacy rate ranging between 50% and 70%, indicating that there is room for improvement in education in these areas. The literacy rate in the tehsils such as Bhinay, Sawar, Masooda, Sarwar, and Arain is below 60%, indicating that the literacy level in these areas needs significant attention. In conclusion, the table highlights the importance of education in different areas and the need to improve the literacy rate, particularly in areas with lower rates. From table 1, four distinctive areas appear on map2 at tehsil level.

- Very high Literacy areas:** There is only one tehsil in this category that is Ajmer. It has 81.41 percent literate population. The main reason for this being the Ajmer town which is situated in this tehsil and has been the hub of educational centres from the British time. It is also the zonal and the district headquarter.
- High Literacy areas:** This group has literacy percentage between 70 to 80. It comprises of 3 tehsils viz., Kishangarh, Beawer, and Tatgarh. All these tehsils are in the eastern, and the southern parts of the region.
- Medium Literacy areas:** This group comprises of literacy rates between 60 to 70 percent. There are 5 tehsils in this group with Kekri, Peesangan, Vijainagar, Nasirabad and Pushkar tehsils.
- Low Literacy areas:** This group has literacy rates lower than 60 percent. Masooda, Bhinay, Sawar, Tantoti, Arain, Sarwar and Roopangarh are the tehsils of this group. Poverty, scarcity of primary educational facilities and involvement of children in agricultural and animal rearing activities are the reason behind the low literacy rates in this region. Except Sarwar all the tehsils are predominantly rural in nature.



Male-Female differentials in literacy: There were large regional variations in terms of the male-female differential in literacy rate (Table 2). It is maximum in Tantoti 0.714 while it is lowest 0.202 in the Ajmer tehsil. They are categorized into 3 groups as shown in map 3. In the first category, tehsils with differential more than 0.60 are included. These form the very high differential areas. On the map, these areas are located in the southeast and the southern regions.

The disparity in literacy between the sexes is a result of historical biases against female education, which is seen as having little economic worth because of the stigma attached to female employment. Female children often experience neglect, have limited mobility, and may not even be sent to a school in a neighbouring town.

Table 1. Tehsil wise literacy

S.No.	Tehsil	Literacy
1.	Pushkar	69.6
2.	Ajmer	81.41
3.	Tatgarh	70.93
4.	Beawer	76.36
5.	Bhinay	54.84
6.	Sawar	55.2
7.	Kekri	62.83
8.	Vijainagar	66.84
9.	Masooda	57.24
10.	Nasirabad	67.85
11.	Peesangan	61.03
12.	Tantoti	50.54
13.	Sarwar	52.96
14.	Arain	53.69
15.	Roopangarh	55.48
16.	Kishangarh	72.06
	Ajmer District	69.33

Source: Computed by author

Table 2. Male-Female and Urban-Rural Differential Index

S.No.	Tehsil	Male literacy %	Female literacy %	Urban literacy %	Rural literacy %	Urban-Rural Differential Index	Male-Female Differential Index
1	Sawar	73.37	36.62	0	55.2	0.000	0.666
2	Tatgarh	90.63	52.07	0	70.93	0.000	0.544
3	Vijainagar (M)	81.42	51.85	79.82	57.33	0.336	0.442
4	Kekri	78.57	46.78	78.66	55.9	0.362	0.506
5	Beawer	89.49	62.91	84.31	68.09	0.212	0.348
6	Bhinay	73.32	35.92	0	54.84	0.000	0.682
7	Tantoti	68.33	32.25	0	50.54	0.000	0.714
8	Masooda	76.75	36.82	0	57.24	0.000	0.698
9	Sarwar	69.71	35.84	64.56	50.85	0.259	0.640
10	Peesangan	77.41	44.29	0	61.03	0.000	0.543
11	Nasirabad (CB)	82.59	51.53	88.39	59.84	0.421	0.458
12	Arain	69.37	37.53	0	53.69	0.000	0.593
13	Pushkar	82.21	56.08	79.11	64.27	0.213	0.375
14	Ajmer	89.45	72.98	86.52	64.97	0.265	0.202
15	Kishangarh	83.1	60.38	78.97	59.2	0.274	0.315
16	Roopangarh	70.62	39.51	0	55.48	0.000	0.561

Source: Computed by authors

The tehsils in this group are Sarwar, Sawar, Tantoti, Bhinay and Masooda. The second category is the high differential index. It includes tehsils with differentials between 0.40 and 0.60. There are seven tehsils in this which are Roopangarh, Arain, Nasirabad, Peesangan, Kekri, Vijainagar and Tatgarh. These are scattered on the map 3. The third category comprises of moderate differential areas with indices less than 0.40. These tehsils are visible in the centre of the map, and they are Pushkar, Ajmer, Kishangarh and Beawer. The reason for this high literacy rate is:

- The urbanisation level in these tehsils is significant.
- The presence of greater educational resources in towns and cities.
- Improved knowledge of literacy among urban residents.
- In urban areas, literacy is more crucial for work and children are less useful for parents' jobs.

Urban-Rural differentials in literacy: At the regional level, the urban-rural differential index value in literacy is 0.359 (Table 2). Like the male-female differential, the urban-rural differential also varies from one part of the region to another from 0.421 in Nasirabad to 0 in eight tehsils. Based on variations in index values, the tehsils in the state can be grouped into three categories (Map 4). In the first category tehsils with differential index, more than 0.40 are included. These are areas of the very high differential which comprise of 1 tehsil viz., Nasirabad. In the second category of high differential index values from 0.25 to 0.40, there are 5 tehsils namely, Kishangarh, Ajmer, Sarwar, Vijainagar and Kekri. All these tehsils have differential index below the regional value of 0.359 except Kekri. The third category comprises of moderate differential areas with indices from less than 0.25. There are 2 tehsils in this group comprising Beawer, and Pushkar. Both urban and rural regions have high literacy rates in the tehsils with higher differential index values.

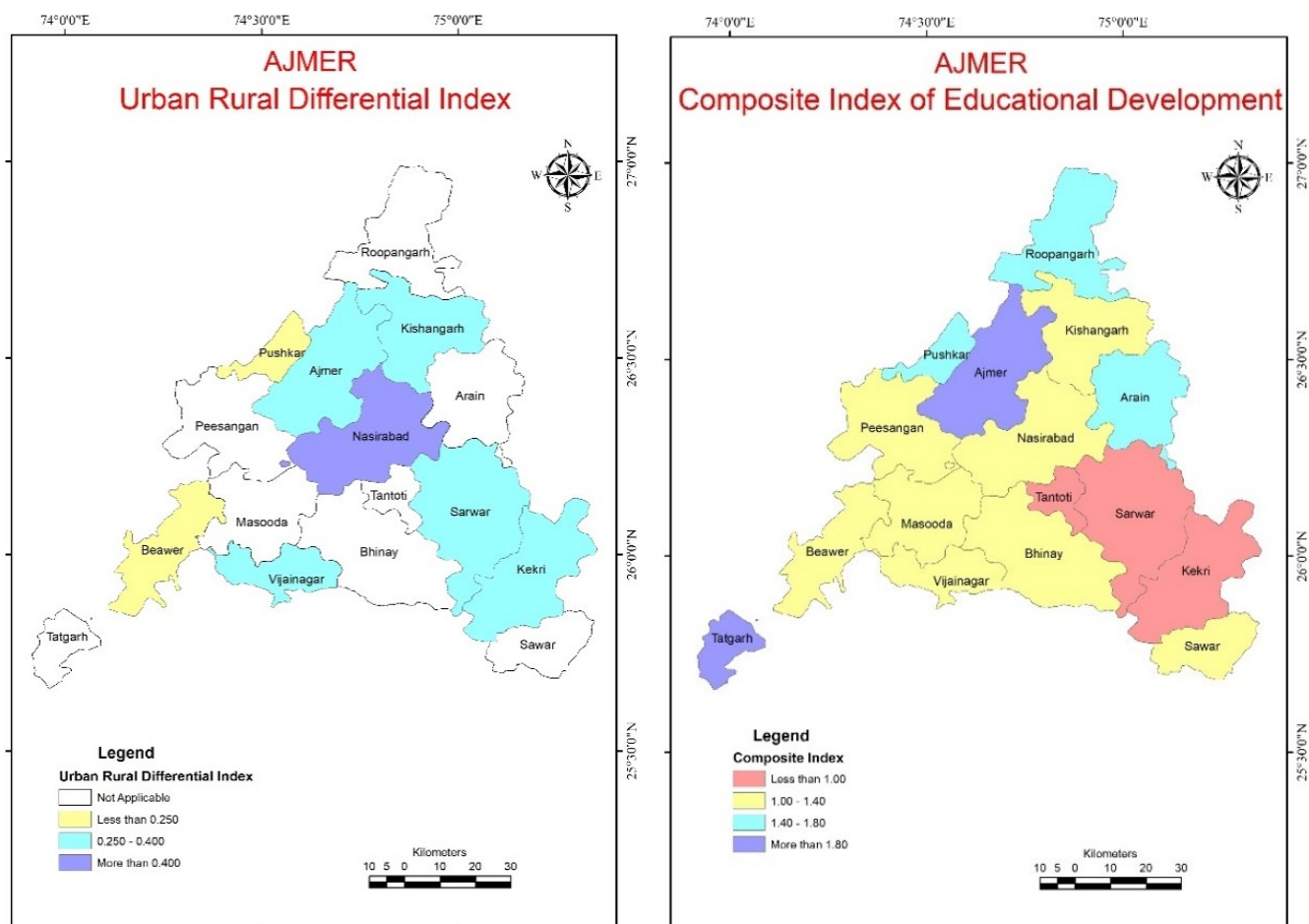


Table 3. Composite Index of Literacy Development for Ajmer District – 2011

S.No.	Tehsil	Total Literacy	M - F Difference	R - U Difference	Lit Difference between General Class and SC+ST	Composite Index of development
1	Ajmer	81.41	16.47	21.55	2.7	2
2	Tatgarh	70.93	38.56	0	0.49	1.82
3	Roopangarh	55.48	31.11	0	2.55	1.65
4	Pushkar	69.6	26.13	14.84	3.05	1.58
5	Arain	53.69	31.84	0	4.32	1.48
6	Bhinay	54.84	37.4	0	2.89	1.36
7	Peesangan	61.03	33.12	0	13.44	1.31
8	Kishangarh	72.06	22.72	19.77	12.56	1.31
9	Sawar	55.2	36.75	0	8.97	1.21
10	Beawer	76.36	26.58	16.22	21.7	1.18
11	Vijainagar	66.84	29.57	22.49	7.61	1.12
12	Masooda	57.24	39.93	0	11.25	1.12
13	Nasirabad	67.85	31.06	28.55	2.07	1.1
14	Kekri	62.83	31.79	22.76	8.83	0.99
15	Tantoti	50.54	36.08	0	18.02	0.93
16	Sarwar	52.96	33.87	13.71	33.49	0.65

Source: Computed by authors

Different levels of urbanization, a mainly agricultural economy, a high concentration of socioeconomically backward segments of society, and an inadequate educational infrastructure are the primary causes of very high and high differentials.

Literacy Development based on Composite Index: The basic literacy rate of a district or state is an inadequate measure of literacy development. This is because there are various types of differentials present within the data, such as the differences between genders, between rural and urban areas, and between castes. High disparities indicate low levels of development. In an ideal situation, the literacy rates of males and females in any developed area should be equal or nearly equal. We take into consideration this notion while computing the composite development index, which involves considering the

overall literacy rate as well as incorporating Male-Female differentials, Rural-Urban differentials, and Caste differentials using a specific formula,

$$\text{Composite Index of Development} = \frac{\text{Total Literacy Rate}}{\text{M-F differentials} + \text{R-U differentials} + \text{Caste differentials}}$$

In other words, a high composite index value indicates greater literacy development, whereas a low value indicates lower literacy development. In Table 3 (Map-5) tehsils are arranged in descending order according to the index value. Ajmer is in top position and Sarwar is in the bottom. The data represents the composite index of literacy development for various tehsils in Ajmer district. The highest composite index value is 2, which is for the Ajmer tehsil. The lowest

value is 0.65, which is for the Sarwar tehsil. Based on the data, we can observe that Ajmer tehsil has the highest level of literacy development, followed by Tatgarh, Roopangarh, Pushkar, Arain, Bhinay, Peesangan, Kishangarh, Sawar, Beawer, Vijainagar, Masooda, Nasirabad, Kekri, and Tantoti. Sarwar tehsil has the lowest composite index of literacy development, indicating that it has the lowest level of literacy development among all the tehsils in Ajmer district because it has high male-female difference, high urban-rural difference, and high difference between general and SC-ST literacy. Overall, the data suggests that there are disparities in literacy development across different tehsils in Ajmer district, with some tehsils having a much higher composite index value than others. Tatgarh, Roopangarh, Arain, Bhinay, Peesangan, Sawar, and Masooda have done a bit better as there is no urban population in these tehsils.

CONCLUSIONS

Although there has been an increase in literacy in Ajmer district, it still lags behind other regions in the state. Gender and urban-rural literacy disparities are significant, particularly in rural areas where poverty and gender biases against female education exist. In tehsils like Sarwar and Tantoti, which are socio-economically underdeveloped, girls are often tasked with farm work and animal husbandry, depriving them of educational opportunities. Sarwar tehsil, which is noticeably underdeveloped on the composite index of literacy development map, requires immediate attention from the government. Statistical analysis indicates that low urban-rural literacy differentials are typical of areas with higher urbanization, literacy rates, educational and medical facilities, commercialized agriculture, and well-connected roads. Tehsils like Sarwar should be given high priority to bridge the gap with more developed areas, demonstrating the success of planning with social justice. To achieve the objective of universal education, greater emphasis must be placed on promoting female literacy and narrowing the gender gap in literacy rates. Financial aid must be provided to the disadvantaged segments of society, particularly in rural areas, to improve their socio-economic conditions. This effort can be supported by local bodies, NGOs, and volunteer organizations. Poverty eradication initiatives are critical to the success of any literacy program, and this responsibility should not fall solely on the government. All segments of society must participate in such programs to ensure their success.

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