



## SPATIO-TEMPORAL PATTERN OF LITERACY IN HARYANA

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### Abstract:

*Being one of the most important indicators of socio-economic change, study of literacy pattern and trend of an area is quite important. Therefore, the present paper is aimed to analyze the spatio-temporal pattern of literacy in Haryana state. The study reveals that overall there is significant increase in literacy rates in the state, which has increased from 67.91 % to 76.64 % between the years 2001 to 2011. There is a significant difference in literacy rates between males and females in the both rural and urban area of the district. Male literacy rates are substantially higher compared to females in both rural and urban area in every district. However, in rural area male literacy rates are more than the corresponding female's literacy rates. Thus, females are lagging far behind males in literacy in both rural and urban areas.*

### Introduction:

Literacy refers to the capability of a person to read and write with understanding in at least one language. According to the Census of India, a person who can read and write with understanding in any language is considered as literate. All children below the age of 6 years have been treated as illiterate ( Census of India ). Literacy is considered as a fairly reliable index of socio-cultural and economic advancement. It is essential for social reconstruction, improvement, in quality of



life and preparation of manpower for rapid development. Literacy is essential for eradicating poverty and mental isolation for cultivating peaceful and friendly international relations and for permitting the free play of demographic process. Literacy influence such attributes of population as fertility, mortality, mobility, occupations etc. The developing country countries like India are not only characterized not only by low literacy level but also by a great disparity in literacy level between rural and urban, between males and females and between young and the aged. Therefore, the study of literacy pattern and trends is of immense significance.

#### Objectives:

- To analyse the spatial pattern of literacy in rural and urban areas in Haryana state.
- To study the spatial pattern of gender differences in literacy in the state.
- To find out the trend of literacy rate during the decade 2001 to 2011 in the state.
- To study the rural-urban and male-female disparity in literacy rate in the state

#### Database and Research Methodology: -

The present study is mainly based on secondary data, which is collected from District Census Handbook, Census of Haryana and Statistical Abstract of Haryana. 2001 and 2011 period is selected for study purpose. An attempt has been made to tabulate process, analyze and interpret the data by applying suitable statistical and cartographic techniques. District wise spatial variation in literacy rates has been shown on maps by using choropleth method. Literacy rate has been calculated by using the following formula:



$$\text{Literacy in \%} = \frac{\text{Number of literates (above 6 years)}}{\text{Total Population}} \times 100$$

For the measurement of male female and rural urban disparity in literacy, Sopher's Disparity Index (1974) modified by Kundu and Rao (1983) has been employed:

$$Ds = \log \left( \frac{X_2}{X_1} \right) + \log \left( \frac{100 - X_1}{100 - X_2} \right) \dots (I)$$

Kundu and Rao's modified disparity index formula, as follows:

$$Ds = \log \left( \frac{X_2}{X_1} \right) + \log \left( \frac{200 - X_1}{200 - X_2} \right) \dots (II)$$

$X_2$  is considered for male and  $X_1$  for female literacy rates.

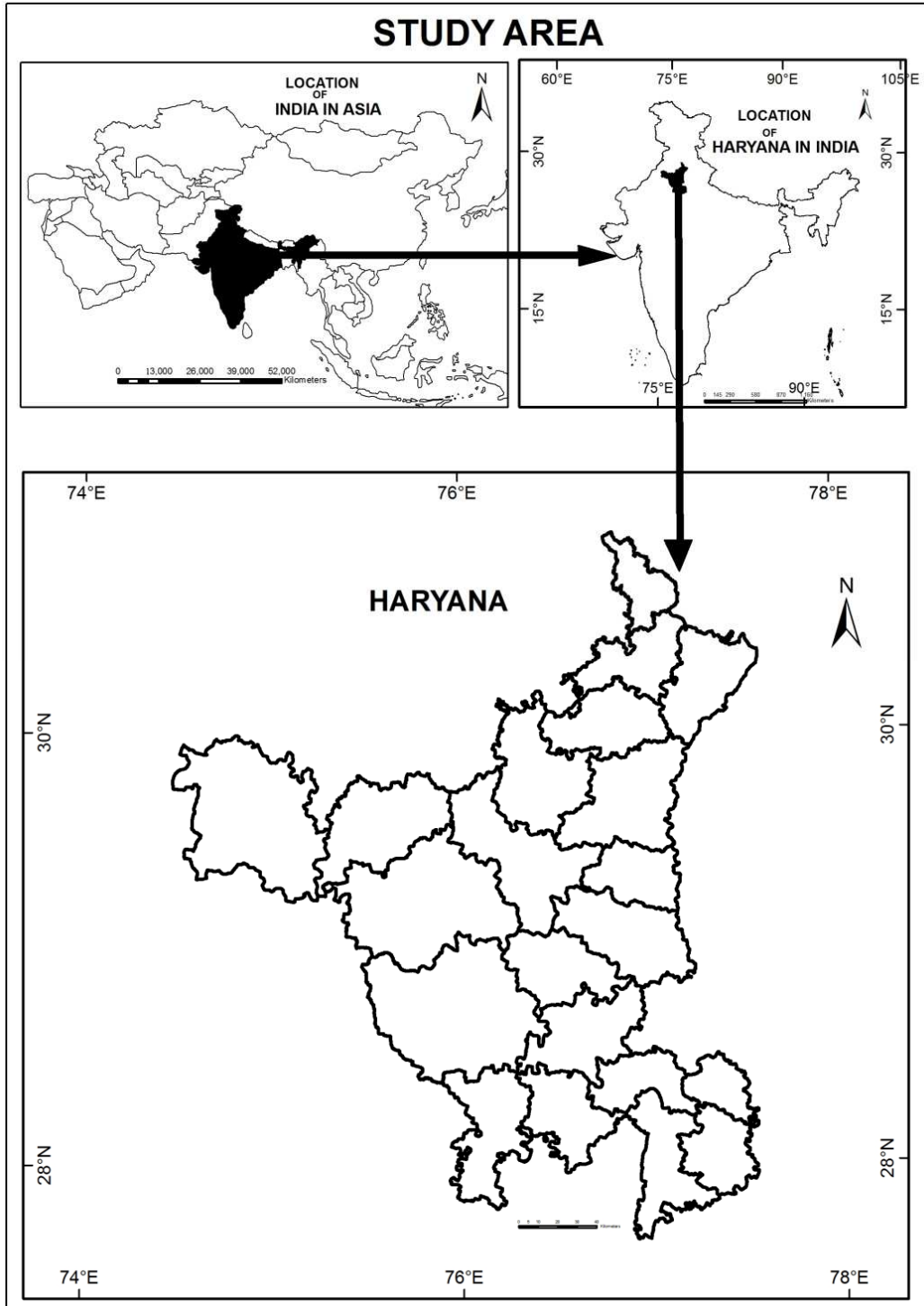


Figure 1 Source: Statistical Abstract of Haryana, 2008-2009

The present study relates to the state of Haryana, which covers an area of about 44212 square km. It constitutes 1.44 percent of the total geographical area of the country. It extends from 27<sup>0</sup>39' to 30<sup>0</sup>55'51" north latitudes and from 74<sup>0</sup>27'80" north to 77<sup>0</sup>36'05" east



longitudes. It is situated in the north-western part of India and is a part of Indo-Gangtic plain. It is bounded by Himachal Pradesh in the north, Uttar Pradesh and Delhi in the east and by Punjab and Chandigarh on the northwest. The state of Rajasthan lies in the south and west.

### Discussion:

Tab-1: Pattern of Literacy and Decadal Change in Literacy Rate (2001-2011) In Haryana

Districts	Percentage of literates		
	2011	2001	Percentage Change in Literates
Ambala	82.89	75.31	7.58
Panchkula	83.44	74.00	9.44
Yamunanagar	78.93	71.63	7.3
Kurukshetra	76.70	69.88	6.82
Kaithal	70.56	59.02	11.54
Karnal	76.44	67.74	8.7
Panipat	77.46	69.17	8.29
Sonipat	80.83	72.79	8.04
Rohtak	80.37	73.72	6.65
Jhajjar	80.83	72.38	7.45
Faridabad	83.04	76.29	6.75
Palwal	70.32	59.19	11.13
Gurgaon	84.44	78.51	5.93
Mewat	56.14	43.51	12.63
Rewari	82.23	75.25	6.98
Mahendragarh	78.87	69.89	8.98
Bhiwani	76.74	67.45	9.29
Jind	72.73	62.12	10.61
Hisar	73.24	64.83	8.41
Fatehabad	69.13	57.98	11.15
Sirsa	70.35	60.55	9.8
Haryana	76.64	67.91	8.73





The above table -1 presents an overall picture of literacy rate and district-wise percentage change in literacy between 2001 to 2011 in the state. The percentage of literates to total population in the state has gone up from 67.91 in 2001 to 76.64 % in 2011. Fig. 1 and fig. 2 give a visual impression of inter-districts variations in literacy rate in the state. The lowest literacy rate in 2001 as well as in 2011 has recorded in Mewat district 43.51 percent and 56.14 percent respectively. It is because of pre-dominance of backward Muslims population in the districts which give less attention towards education. In 2001 and 2011 highest literacy rate is found in Gurgaon district, due to National Capital Region. High literacy rate is observed in the districts of Panchkula, Gurgaon, Fridabad, Ambala and Rewari in 2001 as well as in 2011. Literacy rate is comparatively low in the districts of Palwal, Mewat, Kaithal, Fatehabad and Sirsa. Highest percentage change in literacy rate (12.63 %) is observed in Mewat district between 2001 to 2011. Kaithal, Palwal, Jind, and Fatehabad also have experienced high percentage change in literacy rate above 10 percent.

Table-2: Districts- wise Male and Females Literacy Rates (2001-2011) In Haryana

Districts	Percentage of literates					
	2001		2011		Percentage Change in Literates	
	Male	Female	Male	Female	Male	Female
Ambala	82.31	67.39	88.47	76.64	6.16	9.25
Panchkula	80.87	65.65	88.65	77.48	7.78	11.83
Yamunanagar	78.82	63.39	85.06	71.99	6.24	8.60
Kurukshetra	78.06	60.61	83.46	69.18	5.40	8.57
Kaithal	69.15	47.31	79.33	60.69	10.18	13.38
Karnal	76.29	57.97	83.73	68.29	7.44	10.32
Panipat	78.50	57.91	85.45	68.23	6.95	10.32
Sonipat	83.06	60.68	89.40	70.88	6.36	10.20
Rohtak	83.23	62.59	88.42	71.19	5.19	8.60



Jhajjar	83.27	59.65	89.44	70.96	6.17	11.31
Faridabad	85.14	65.63	89.94	75.17	4.80	10.54
Palwal	75.10	40.76	82.60	56.40	7.50	15.64
Gurgaon	87.97	67.49	90.27	77.64	2.30	10.15
Mewat	61.18	23.89	72.98	37.58	11.80	13.69
Rewari	88.45	60.83	92.92	70.54	4.47	9.71
Mahendragarh	84.72	54.08	91.26	67.25	6.54	13.17
Bhiwani	80.26	53.00	87.39	64.60	7.13	11.60
Jind	73.82	48.51	82.49	61.58	8.67	13.07
Hisar	76.57	51.08	82.79	62.31	6.12	11.23
Fatehabad	68.22	46.53	78.10	59.29	9.88	12.76
Sirsa	70.05	49.93	78.64	61.16	8.59	11.23
Haryana	78.49	55.73	85.38	66.77	6.89	11.04

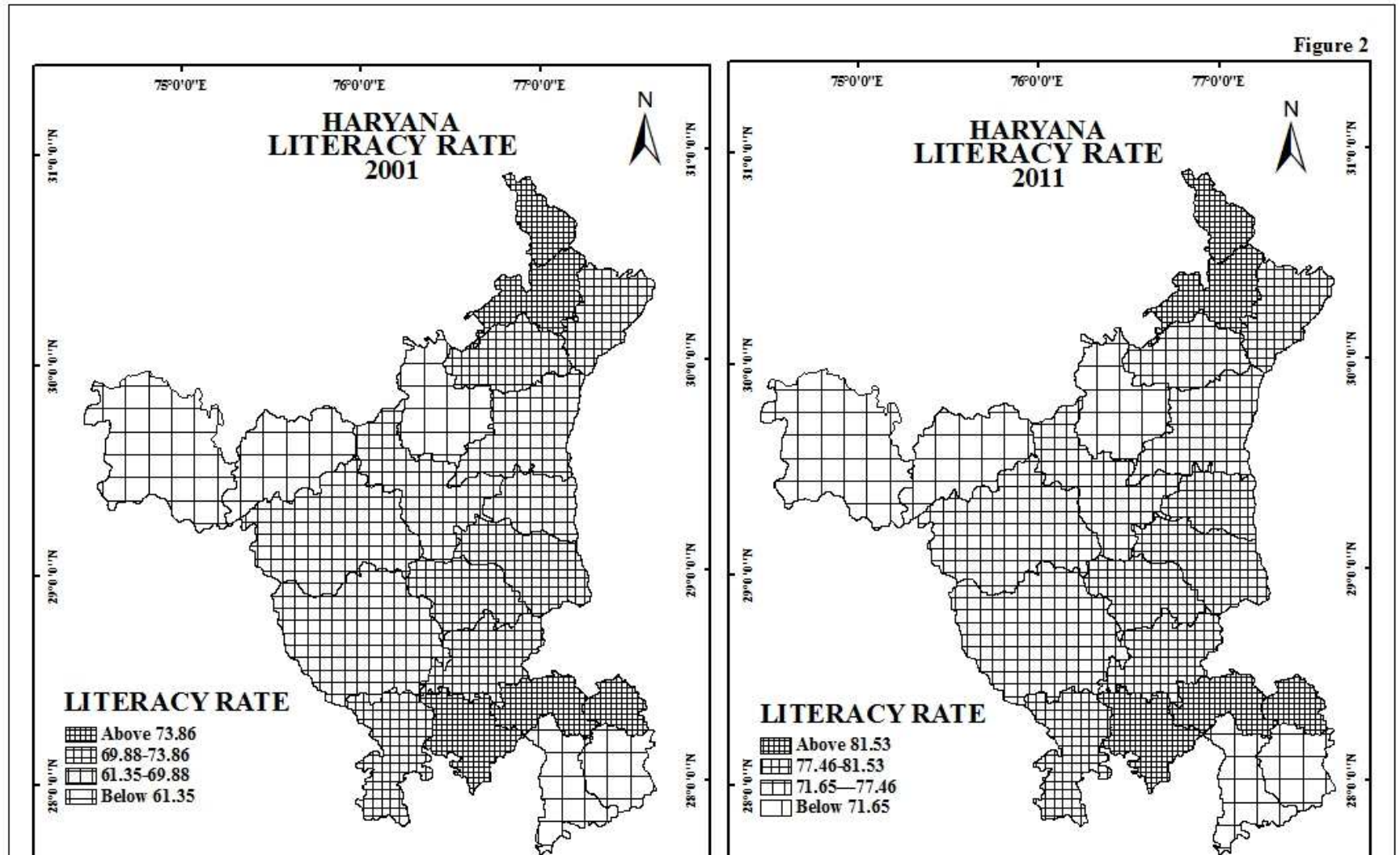






Table-2 shows trend, pattern and percentage change in literacy rate among male and female population of Haryana for both the study periods. For the state as a whole, the literacy rate for males is much higher than that of females, 78.49 % of males are literates, while females account only 55.73 % (2001) where as the literacy rate among male and females are recorded 85.38 % and 66.77 % respectively in the year 2011. It indicates that gap between male and female literacy rate is narrowing down from 23.24 percent in 2001 to 18.61 percent in 2011. The pattern of literacy reveals that highest and lowest literacy rate for males is registered in Rewari (88.45%) and Mewat (61.18%) districts respectively in 2001, while for female, it is found in Gurgaon (67.49%) and Mewat (23.89%) districts respectively. In 2011, Rewari district tops in male literacy (92.92%), while in case of female Gurgaon stands at top with 77.64 % literacy rate. Mewat district stands at bottom with 72.98 % and 37.58 % male and females literacy rates respectively. It is clear from the pattern of literacy that districts adjoining to NCR have recorded high literacy rate during both study periods. It is because of better educational facilities and awareness of peoples towards education. It is clear from the table that highest percentage change in literacy rate for males is experienced in Mewat (11.80 %), while for females in Palwal (15.64 %) district. Those districts, which have low literacy rates, have registered high percentages change in literacy rate for both male and females, which include Kaithal, Mewat, Palwal, Jind, etc. Districts having higher rate of literacy have experienced lesser percentages change in literacy rate for both male and females, including Rewari, Gurgaon, Fridabad, Rohtak, etc.

The table 3 shows the sex-wise differences in literacy rates in rural and urban areas during 2001-2011. In 2001, male-females literacy rate in rural areas is 75.37 % and 49.27 % respectively, while in urban areas, it is 85.83 % and 71.34 % for male and females respectively. In the state as a whole, 83.20 % and 89.37 % male literacy rate is registered in rural and urban areas respectively in 2011, while females literacy rate in rural and urban areas is recorded 60.97 % and 77.51 %. Thus there is a wide gap between male-female's literacy rates in rural and urban areas.



In 2001, highest literacy rate in rural and urban areas is recorded in Ambala (88.06%) and Gurgaon (90.04%) districts respectively for males and Gurgaon (62.13%) and Ambala (80.48%) districts for females. In 2011, highest male and females literacy rates in rural areas are found in Rewari (92.88 %) and Ambala districts respectively, while in urban areas highest literacy rates among male and females is found in Rewari ( 93.03%) and Ambala districts respectively.

Table-3 Sex-wise Literacy Rate In Rural And Urban Areas (2001-2011 )In Haryana

Districts	Percentage of literates							
	2001				2011			
	Rural		Urban		Rural		Urban	
	Male	Female	Male	Female	Male	Female	Male	Female
Ambala	78.05	60.25	89.74	80.48	86.01	70.48	91.47	84.35
Panchkula	75.49	55.39	87.61	77.47	84.59	69.10	91.96	84.06
Yamunanagar	74.13	55.32	86.26	76.37	82.39	66.60	89.14	80.37
Kurukshetra	75.01	55.64	86.32	74.51	80.99	64.86	89.27	79.82
Kaithal	66.60	43.25	79.67	63.90	77.60	57.80	85.46	70.77
Karnal	72.92	52.01	85.31	73.96	81.50	63.70	88.75	78.59
Panipat	75.81	50.48	82.30	68.84	83.69	62.97	87.48	74.31
Sonipat	81.50	56.59	87.64	72.50	88.07	67.35	92.42	78.73
Rohtak	81.07	55.87	87.19	74.48	88.13	66.32	88.83	77.68
Jhajjar	82.14	56.72	87.12	70.10	88.25	68.22	92.94	78.98
Faridabad	75.56	47.34	86.89	70.67	87.76	61.97	90.48	78.46
Palwal	73.20	35.33	82.76	62.33	81.37	52.53	86.63	68.96
Gurgaon	86.82	62.13	90.03	76.93	91.31	69.63	89.82	81.33



Mewat	59.45	21.03	80.64	56.56	71.61	34.63	83.03	59.34
Rewari	88.06	58.24	90.14	73.04	92.88	67.91	93.02	78.31
Mahendragarh	84.06	52.18	88.82	66.35	91.15	63.66	92.05	74.69
Bhiwani	79.10	49.72	85.02	66.90	86.79	62.21	89.76	75.20
Jind	71.06	43.93	84.51	65.96	80.63	58.15	88.77	73.01
Hisar	73.54	44.54	84.96	69.31	81.13	57.40	86.28	72.87
Fatehabad	65.61	42.23	80.17	66.27	76.47	56.03	84.95	72.95
Sirsa	66.33	44.09	80.25	66.07	75.98	56.81	86.66	74.25
Haryana	75.37	49.27	85.83	71.34	83.20	60.97	89.37	77.51



Figure 3

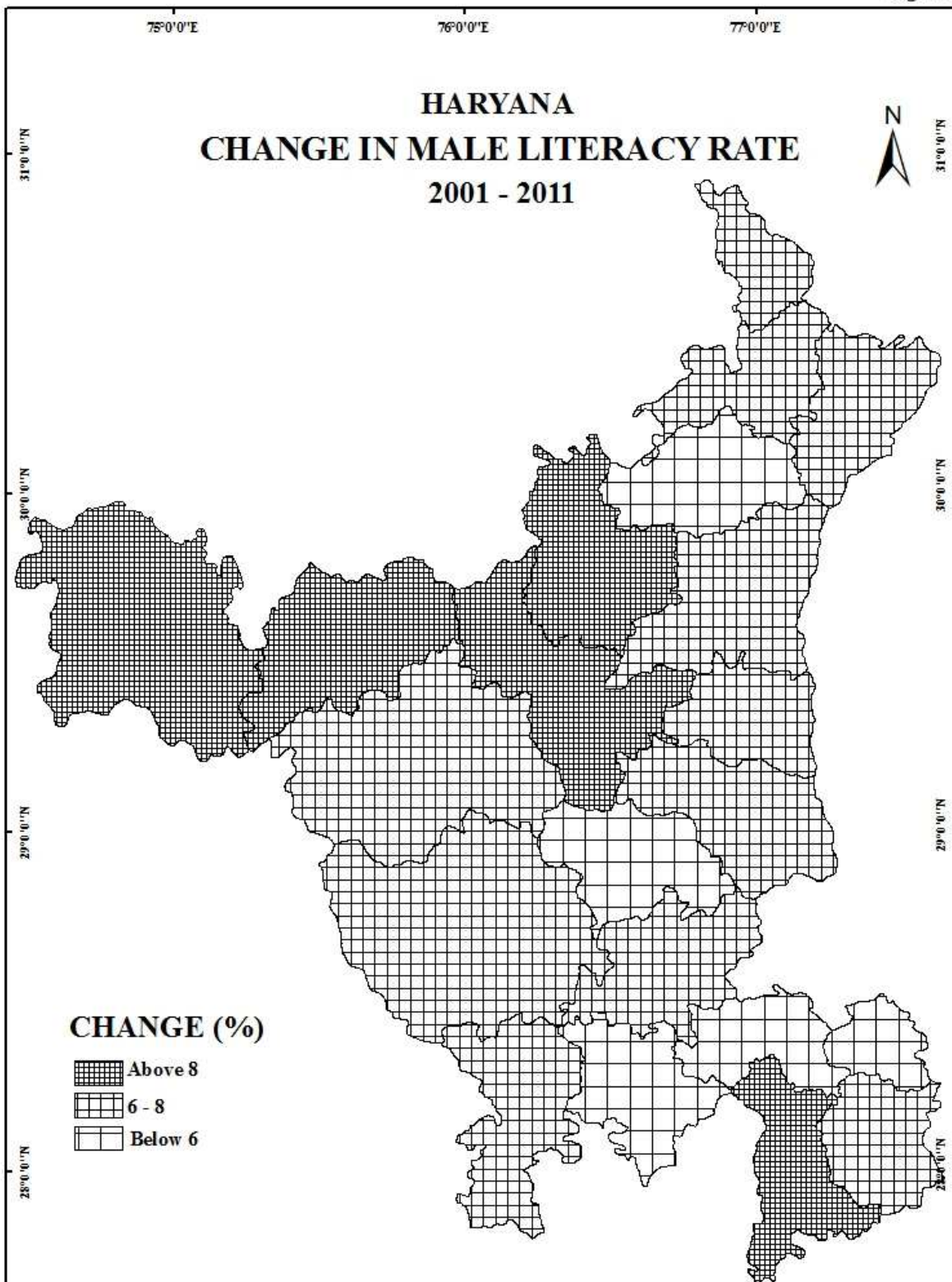
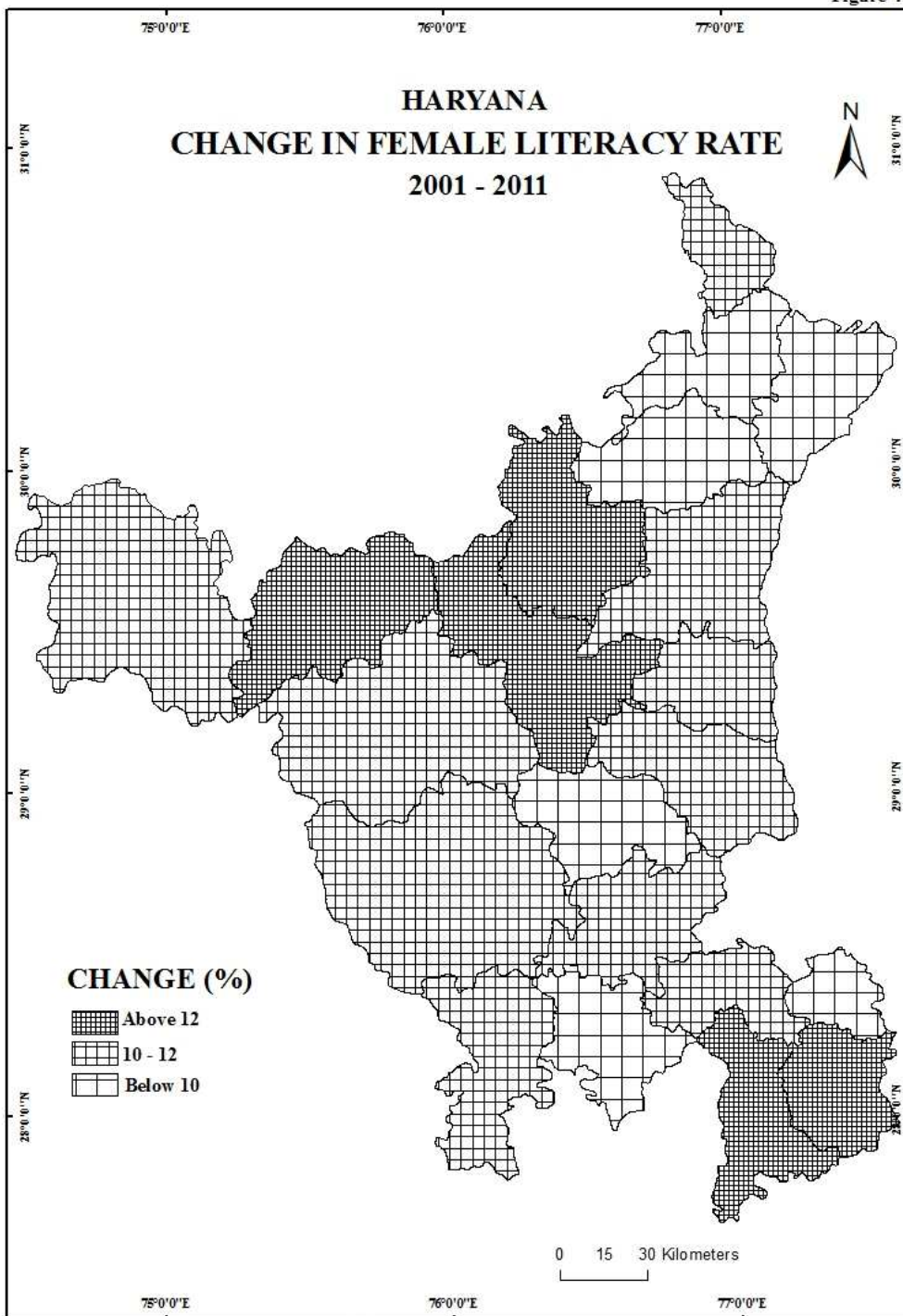






Figure 4



Sourec: Statistical Abstract of Haryana, 2001, 2011



**Male-Female Disparity, 2001-2011:**

The traditional view point regarding the importance of female literacy, as it seems, has not go much importance even at the end of the 20th century, especially among backward communities, because there has been still a very large disparity between male and female literacy rates (Ramotra, 2003). The male-female disparity in the state as a whole is observed 0.223 in 2001, which comes down as much as 0.172 in 2011.

**Table-4 Male-Female Disparity in Haryana, 2001-2011**

Districts	Male-Female Disparity Indices	
	2001	2011
Ambala	0.139	0.106
Panchkula	0.143	0.100
Yamunanagar	0.147	0.119
Kurukshetra	0.168	0.132
Kaithal	0.232	0.179
Karnal	0.179	0.143
Panipat	0.200	0.159
Sonipat	0.212	0.168
Rohtak	0.194	0.156
Jhajjar	0.225	0.168
Faridabad	0.181	0.133
Palwal	0.371	0.253
Gurgaon	0.188	0.113
Mewat	0.512	0.395
Rewari	0.259	0.202
Mahendragarh	0.297	0.219
Bhiwani	0.269	0.211
Jind	0.262	0.198
Hisar	0.257	0.193
Fatehabad	0.232	0.182
Sirsa	0.210	0.168
Haryana	0.223	0.172



The male-female disparity in the study area is very high as the disparity index is as high as 0.512 in Mewat district in 2001, while lowest in Ambala (0.139 ) district. The maximum male-female disparity in 2011 is observed in Mewat (0.395) district and minimum in Panchkula ( 0.100 ) in 2011. It is observed that there are nine districts in the state, which have male-female disparity above the state average (0.172). Disparity in literacy generates a number of social, economic and political problems which may threaten the very foundation of development (Singh and Chauhan, 2010). Hence, the male-female disparity found in the study area is cause of concern and should be prime priority in the development planning.

Table-5: Pattern Of Literacy Rate and Disparity Index In Rural And Urban Areas (2001-2011 )  
In Haryana

Districts	Percentage of literates					
	2001		2011		Disparity	
	Rural	Urban	Rural	Urban	Index	2011
Ambala	69.63	85.47	78.64	88.15	0.145	0.085
Panchkula	66.62	82.91	77.45	88.25	0.152	0.097
Yamunanagar	65.35	81.67	74.96	85.05	0.153	0.091
Kurukshetra	65.88	80.86	73.30	84.47	0.140	0.102
Kaithal	55.78	72.33	68.29	78.52	0.166	0.096
Karnal	63.16	80.02	73.10	83.94	0.160	0.099
Panipat	64.23	76.24	74.09	81.37	0.115	0.067
Sonapat	70.09	80.67	78.53	86.02	0.098	0.067
Rohtak	69.53	81.26	78.03	83.56	0.109	0.050
Jhajjar	70.36	79.42	78.92	86.42	0.084	0.067
Faridabad	64.10	79.62	75.72	84.87	0.147	0.083
Palwal	55.69	73.23	67.87	78.30	0.175	0.098
Gurgaon	75.44	83.95	81.10	85.94	0.077	0.043
Mewat	41.24	69.29	54.01	71.78	0.310	0.180
Rewari	73.70	82.25	80.87	86.13	0.078	0.047
Mahendragarh	68.57	78.19	78.04	83.80	0.090	0.052
Bhiwani	65.25	76.62	75.20	82.91	0.108	0.070
Jind	58.55	75.87	70.16	81.37	0.169	0.104



Hisar	60.16	77.72	70.02	80.08	0.170	0.093
Fatehabad	54.56	73.61	66.73	79.22	0.191	0.117
Sirsa	55.82	73.58	66.90	80.77	0.177	0.130
Haryana	63.19	79.16	72.74	83.83	0.152	0.101

Table-5 explains the pattern of literacy in urban and rural areas during 2001 and 2011. Literacy rate is higher in urban areas as compared to rural areas. It reveals that in rural and urban area of the state during 2001, the literacy rate is marked 63.19 % and 79.16 % respectively. Gurgaon district has the highest (75.44 %) rural literacy (2001) rate and lowest rural literacy rate is seen in Mewat (41.24 %). There is a significant difference in literacy rates between rural and urban areas of the district. During 2001, highest and literacy rate in urban areas is observed in Ambala (85.47%) and Mewat (69.29%) districts respectively. During 2011 literacy rates in rural and urban areas is recorded 72.74 % and 83.83 % respectively. Inter-districts variation is also prevailing in rural as well as urban areas. In the year 2011, the highest and lowest literacy rate in rural area is recorded 81.10 % and 54.01 % in Gurgaon and Mewat districts respectively, while in urban areas, it is found in Panchkula (88.25%) and Mewat (71.78%) respectively.

To find out the rural-urban differences in literacy rates, disparity index has been calculated. In 2001, rural-urban disparity in literacy is observed 0.152, which comes down 0.101 in 2011. It indicates that people in rural areas has become aware of education. Highest and lowest disparity in rural-urban literacy is registered in Mewat (0.310 and 0.180) and Gurgaon (0.077 and 0.043) districts 0.77 for both the study periods. In 2001, nine districts have disparity index above state average (0.152), while in 2011, only five districts have disparity index above state average (0.101).

### Conclusion:



The above discussion reveals that overall there is significant increase in literacy rates in the state, which has increased from 67.91% to 76.64% between the years 2001 to 2011. There is a significant difference in literacy rates between males and females in the both rural and urban area of the district. Male literacy rates are substantially higher as compared to females in both rural and urban area in every district. However, in rural area, male female literacy rates disparity is higher than the corresponding male-female's literacy rates as compared to urban areas. Thus, females are lagging far behind males in literacy in both rural and urban areas. Disparity in literacy generates a number of social, economic and political problems which may threaten the very foundation of development (Singh and Chauhan, 2010). Hence, the male-female disparity found in the study area is cause of concern and should prime priority in the development planning. The female literacy level as a whole needs to be increased as to bring them at par for their overall development.

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