



## LITERACY RATE AND SEX RATIO IN HARYANA: EVIDENCE FROM A CENSUS OF INDIA, 2011

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### Abstract

*This study aims to determine the association between literacy and sex ratio disparity at the district level in Haryana. According to several social and organisational development indicators, the sex ratio and literacy rate are two of the most significant indicators of any region's social development organisation. Even though it appears that only a high literacy rate may help end poverty in a contemporary society or technological civilisation: the sex ratio and literacy cause over-elaborate immigration in a specific location. The two variables used to measure the associations are the sex ratio and the literacy rate. The information was gathered from the 2011 Indian district-level census as a unit of study. The highest literacy rate was found in the Gurugram district (84.44 per cent), while the Mewat district ranked first with (905 females per 000' males) in all districts. This study has demonstrated a very unfavourable association (highly negative correlation  $r = -0.52$ ).*

**Key Words:** Urban, Rural, Literacy Rate, Sex Ratio, Correlation

### Introduction

Literacy is defined by the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 1957) as the capacity to recognise, comprehend, interpret, communicate with others, and compute using printed and written material related to various settings. Literacy is described as the processing of the quality or state of being literate, knowledge of letters, and circumstances with relation to the education, particularly the capacity to read and write, according to the Oxford Dictionary (Stevenson, 2010). Any individual who can read and write with understanding in any language is considered to be literate, according to the Indian Census from 2011. Many nations are gradually adopting this definition. It makes sense that the number of non-agricultural workers and the literacy rate are positively correlated (Mitra, 2012).

Political thinkers Plato and Aristotle recognised the truth of the proverbs "as the state is, so is the school" and "what you want in the state, you must place in the school." According to Golden (1972), countries' ability to proceed along the road of social and economic development is hampered by low literacy rates. He remarked, "Different rates of change among the population are typically seen when a country transitions from illiteracy to literacy.



Young individuals are more passionate about learning to read and write than older people are (Golden, 1972).

An important factor in a nation's social and economic success is literacy. A population's literacy level may be used to track changes in social and economic progress as well as political dominance. In a society, illiteracy, particularly among adults, has a negative impact on the progress of technology, social and cultural gaps, national security, and total economic growth. The main obstacle to cordial and diplomatic international interactions as well as independent national processes is illiteracy in a community (Murphy, 1970). It makes sense that the trends in literacy are viewed as a gauge of how quickly a society is undergoing socioeconomic change (Chandna, 1980).

The capacity to read and write a basic phrase coherently in any language or dialect is a need for inclusion in the literate class, and this skill is referred to as literacy. "A person aged more than 6 years and who can both read and write with understanding in any language has taken as a literate (Census of India, 1981)," according to the Indian census. According to the Indian census, the literacy rate is the ratio of literate people to all people aged 7 and older (Census of India, 1991). For the ordinary person to be free from mental poverty, political apathy, constitutional tyranny, knowledge of our operating environment, and the ability to make decisions, literacy is a must. For the purpose of fostering amicable and peaceful relations between nations, encouraging the free play of demographic processes, and reducing poverty and mental isolation, literacy is necessary (Chandana, 2008).

In India, the term "*sex ratio*" refers to the proportion of females to men in a population, but the term "*sex ratio*" as used worldwide refers to the proportion of males to females. In developing nations like India, the gender ratio is typically skewed in favour of men. By perceiving the male as a family's asset and the female as a burden, the patriarchal culture that currently exists contributes to gender inequality. A falling child sex ratio that favours men over females has been a defining feature of India's demographic trend during the past few decades. Since the early 1980s, this pattern has been seen across the nation and has not changed. Three decades have passed with little change in the sex ratios of China and India. One of the key defensive factors for gauging the degree of society living or social well-being is the percentage of the population that is literate.

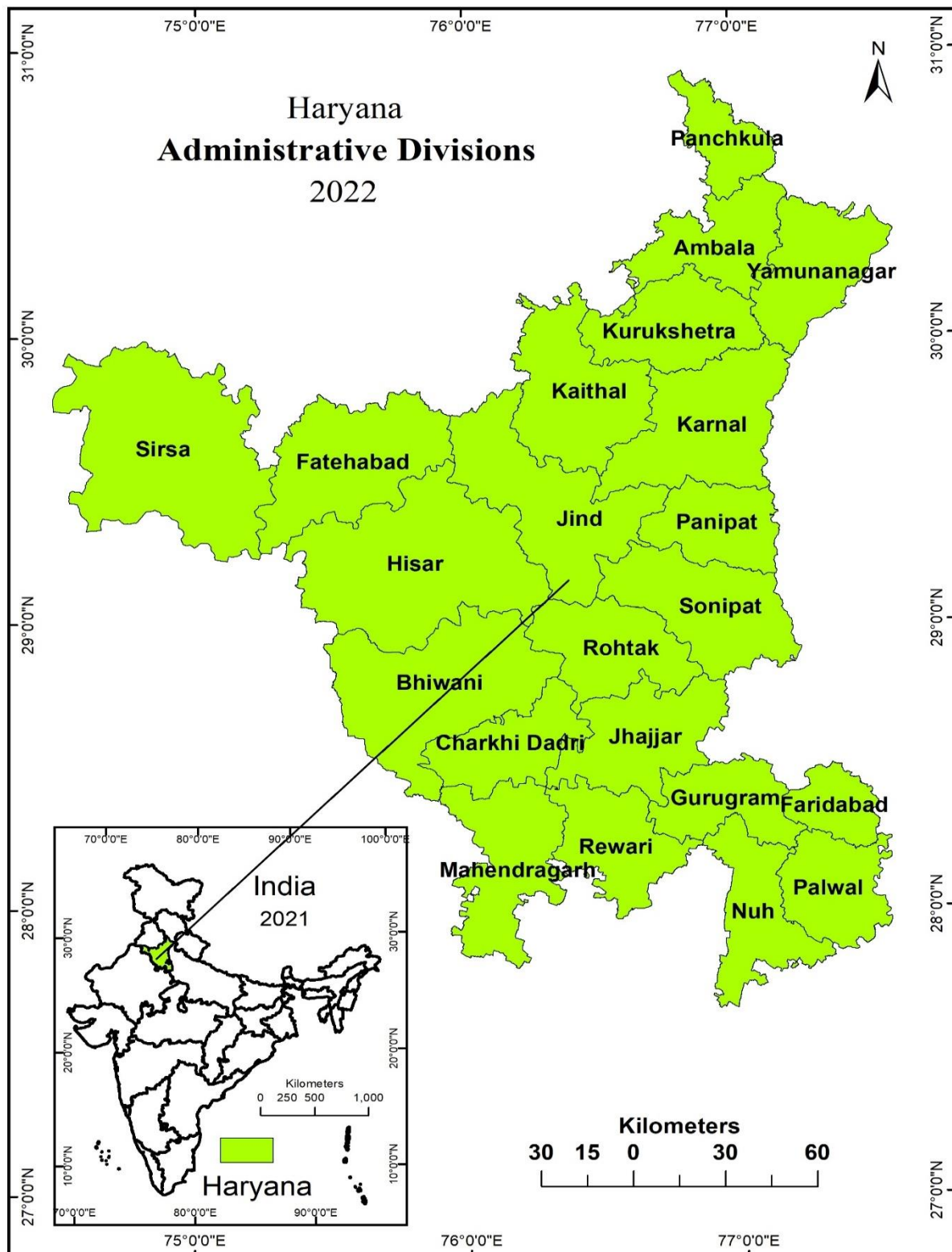
It is thought that broad literacy contributes to much-preferred public awareness, especially through their effective involvement in development initiatives. The male to female population ratio is known as the sex ratio. In India, it is quantified as the proportion of females to men. The four subdivisions of the sex ratio that we typically use are: a) Primary sex ratio-ratio at fertilisation; b) Secondary sex ratio-ratio at birth; c) Tertiary sex ratio-ratio in sexually mature organisms, also known as adult sex ratio; and d) Quaternary sex ratio-ratio in post-reproductive organisms. The tertiary sex ratio is the foundation of this study. The sex ratio in Russia is expressed as the number of men for every thousand women. The sex ratio is a crucial sociological indicator for determining the level of equity between men and women in a culture at a certain moment (Mazumdar, 2013).



It has a lot to do with the interaction between the sex ratio at birth and at the time of the abortion, the sex disparity in mortality, sex-selective migration, and population enumeration (Mazumdar, 2013). The general demographic mix of the population is also determined by factors such as marital status, labour availability, the gross domestic product, planning for housing, healthcare, and education, among other things.

### **Study Area**

Haryana's precise location is between latitudes 27° 39' 00" and 30° 55' 05" north and longitudes 74° 27' 08" and 77° 36' 05" east. It occupies a 44,212 km<sup>2</sup> area, or 1.37 percent of the entire land area of the nation. The 2011 census indicates that there are 253 million people living in Haryana. Out of a total population of 253 million, 153 million are men and 118 million are women, making up 2% of the population. The lowest sex ratio in India, at 877 females for every 1,000 men, was reported in Haryana. The literacy rate in Haryana is 76.64 percent on average. The state now has 119 blocks, 74 tehsils, 44 sub-tehsils, 21 districts, 4 divisions, and 57 subdivisions. There are 154 cities and 6841 villages in the state of Haryana. Figure 1.1 depicts the geography of the Indian state of Haryana and the split of its government in 2011.



Map 1: Location Map of Study of Area

## Objectives

The following are the key objectives:

- i. to investigate the distribution of literacy rates at the district level in Haryana.
- ii. to research the district-level sex ratio tendency in Haryana.
- iii. to examine the relationship between Haryana's district-level literacy distribution and sex ratio.

## Database and Methodology

To meet the objectives, information on Haryana's literacy and gender distribution is used from the 2011 statistics summary and the 2011 Indian census. To determine the link between the spatial pattern of literacy rate and sex ratio in Haryana at the district level, the gathered data are tabulated and computed. The spatial distribution of literacy and sex ratio in Haryana has been depicted on a thematic map created using Arc GIS 10.3 software. The association between literacy and sex ratio is examined using the Spearman's rank order approach. Using the Spearman's Rank co-relation formula, the following has been done:

$$\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}.$$

Where n is the total number of observations,  $d_i^2$  is the difference between the rankings of two variables, R1-R2, and the districts of Haryana have been divided into five categories using the Jenks method: high, moderate, and low. To demonstrate how the data varied, the state average value and standard deviation were also computed.

## Result Analysis & Discussion

### Spatial Pattern of Sex Ratio

The lowest sex ratio in India is found in Haryana, where there were 877 females for every 1,000 males in 2011. The district level sex ratio varies greatly from district to district and runs from 877 to 906. Haryana's total 21 districts are divided into the following three groups:

### Area of High Sex Ratio

The high category includes the districts with a sex ratio of more than 895. Mewat, Fatehabad, Rewari, and Sirsa districts recorded high sex ratios. Both in terms of agricultural productivity and educational advancement, many areas lag behind. The populace of the areas above these may not be interested in current technologies. Joint family society has made it conceivable as well. The high group includes the districts with the sex ratio ranges (above 885). Mahendragarh, Kurukshetra, and Karnal districts all had high sex ratios (See Table 1).

Mahendragarh lies in the south, whereas Karnal district is in the north. Despite being arid, Mahendragarh district has a modest level of female illiteracy compared to other Haryana districts.

### **Area of Moderate Sex Ratio**

The geographical distribution of sex ratios reveals that Haryana's northern and southern districts fall into every category, with the moderate group including districts with sex ratio ranges between (872 and 884). The districts of Bhawani, Ambala, Kaithal, and Yamunanagar recorded moderate sex ratios. Female literacy rates are high in Ambala and Yamunanagar. These districts are close to all of Haryana's administrative centres (See **Map 3**).

### **Area of Low Sex ratio**

The sex ratios (below 871) in Faridabad, Jind, Rohtak, and Hisar fall into the low group. Due to population movement from states other than Haryana, including as Bihar, Uttar Pradesh, Chhattisgarh, Madhya Pradesh, and West Bengal, the districts in these states have low sex ratios. Haryana's most populous and biggest city is the Faridabad district. It also has the biggest industrialization and urbanisation. The lowest sex ratios are seen in Sonipat, Panipat, Jhajjar, and Gurgaon. Districts with sex ratios between (853 and 861) are categorised as low. As we all know, Gurgaon, Panipat, and Sonipat are industrial regions that serve as a draw for people from lower socioeconomic groups (**Table 1**).

### **Spatial Pattern of Literacy Rate**

In 2011, the average literacy rate in Haryana was 76.64 percent. However, map 2 demonstrates how the districts' levels of literacy vary from one district to the next.

### **Area of High Literacy Rate**

The districts of Gurgaon, Panchkula, Faridabad, Ambala, and Rewari all have high literacy rates. because of the abundance of educational institutions, the extent of urbanisation, the advancement of transportation and communication, and other factors (fig. 1.2). With 84.44 percent, Gurgaon has the highest literacy rate. Sonipat, Jhajjar, Rohtak, Yamunanagar, and Mahendragarh are Haryana districts that fall into this category and have literacy rates ranging above 77.47 per cent. Due to urbanisation and industrial expansion, map 2 demonstrates that the districts of had high literacy scores. Education institutions were required in these regions due to industrial growth.

### **Area of Moderate Literacy Rate**

Between 73.25 and 77.46 percent of people in Panipat, Bhiwani, Kurukshetra, and Karnal have intermediate literacy levels.



**Table 1: District-wise Distribution of Sex Ratio and Literacy Rate and their Ranking in Haryana, 2011**

Districts	Literacy Rate (R <sub>1</sub> )	Sex Ratio (R <sub>2</sub> )	Rank (R <sub>1</sub> )	Rank (R <sub>2</sub> )	D= ( R <sub>1</sub> - R <sub>2</sub> )	D <sup>2</sup>
Ambala	82.89	884	4	8	-4	16
Bhiwani	76.74	884	12	9	3	9
Faridabad	83.04	871	3	13.5	-10.5	110.25
Fatehabad	69.13	903	20	2	18	324
Gurgaon	<b>84.44</b>	<b>853</b>	<b>1</b>	<b>20.5</b>	-19.5	380.25
Hisar	73.24	871	15	13.5	1.5	2.25
Jhajjar	80.83	861	6.5	18.5	-12	144
Jind	72.73	870	16	15.5	0.5	0.25
Kaithal	70.56	880	17	10	7	49
Karnal	76.44	886	14	7	7	49
Kurukshetra	76.7	889	13	6	7	49
Mahendragarh	78.87	894	10	5	5	25
Mewat	<b>56.14</b>	<b>906</b>	<b>21</b>	<b>1</b>	20	400
Palwal	70.32	879	19	11	8	64
Panchkula	83.44	870	2	15.5	-13.5	182.25
Panipat	77.46	861	11	18.5	-7.5	56.25
Rewari	82.23	898	5	3	2	4
Rohtak	80.37	868	8	17	-9	81
Sirsa	70.35	896	18	4	14	196
Sonipat	80.83	853	6.5	20.5	-14	196
<b>Yamunanagar</b>	<b>78.93</b>	<b>877</b>	<b>9</b>	<b>12</b>	<b>-3</b>	<b>9</b>

Source: Computed by Researcher, 2022.

**Area of Low Literacy Rate**

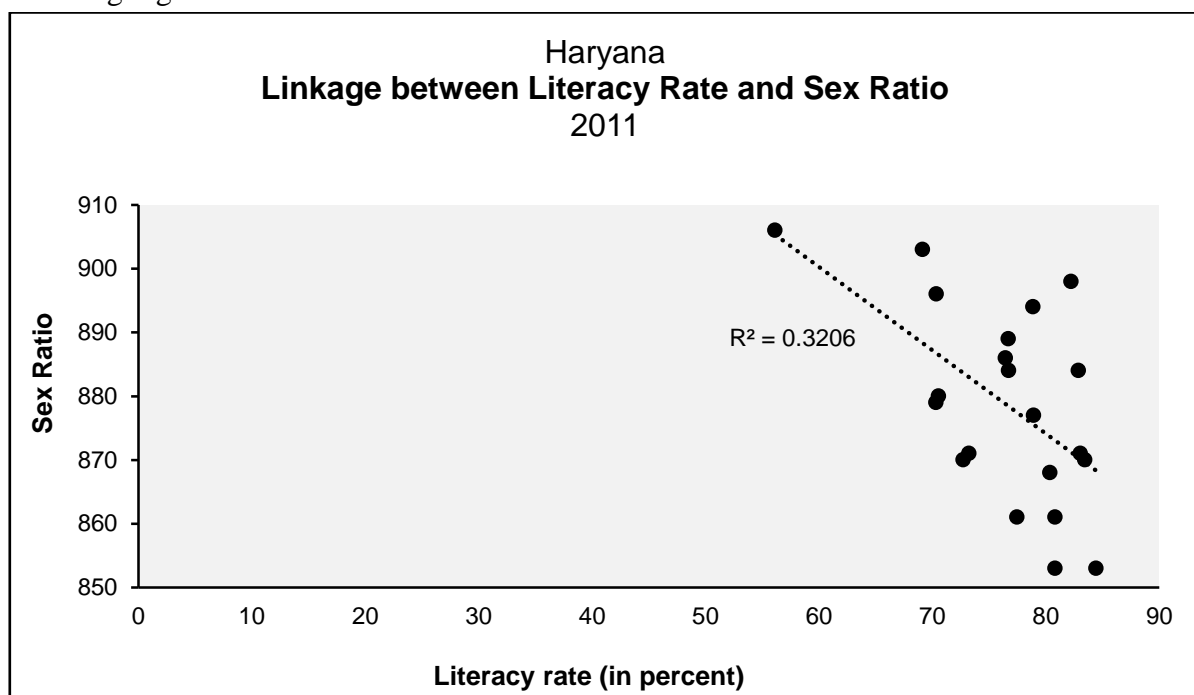
Low literacy rates may be seen in Kaithal, Sirsa, Hisar, Jind, Palwal, and Fatehabad. The score for low literacy is shown in map 2. In Haryana, the districts of Jind and Palwal are neglected politically. In the last ten years, hardly many new educational institutions have been founded. Only one district in Haryana, Mewat (56.14%), has a relatively low literacy rate due to the predominance of Muslims in society and the underdevelopment of educational facilities by the government and NGOs (See **Map 2**).

**Spatial Pattern of Relationship**

The association between literacy and sex ratio in Haryana was calculated using the Spearman's rank difference technique. The literacy rate and sex ratio in Haryana are shown to have a strong negative association, or  $r = -0.52$ .

A high degree of literacy is found in Gurgaon, Faridabad, Yamunanagar, Ambala, and Mahendragarh, although a low sex ratio is observed there due to the makeup of the local population. The sex ratio and literacy rate are also influenced by the types of occupations found in certain areas, such as industrial, agricultural, and service-related ones. While the

literacy rate is high, the sex ratio in the industrial population is low. Low literacy rates and a high sex ratio characterise the agrarian population (See **Fig. 1**). We may conclude that the educated population is more aware of issues like high maternal mortality, sexism, female infanticide, immigration, and other issues involving girls. Therefore, the educated population in society needs more care than the uneducated and less educated people in order to regulate the sex ratio. In India and Haryana, the sex-to-literacy ratio and the social structure of a certain religion are also correlated with each other. In Haryana, the majority-Muslim culture has a high sex ratio but a low percentage of literacy. Despite using statistical analysis, we are unable to conclude that Muslims have a high sex ratio, but this may be the case given their low literacy rates. It implies that the sex ratio will begin to decline as soon as Muslims start attending higher education.

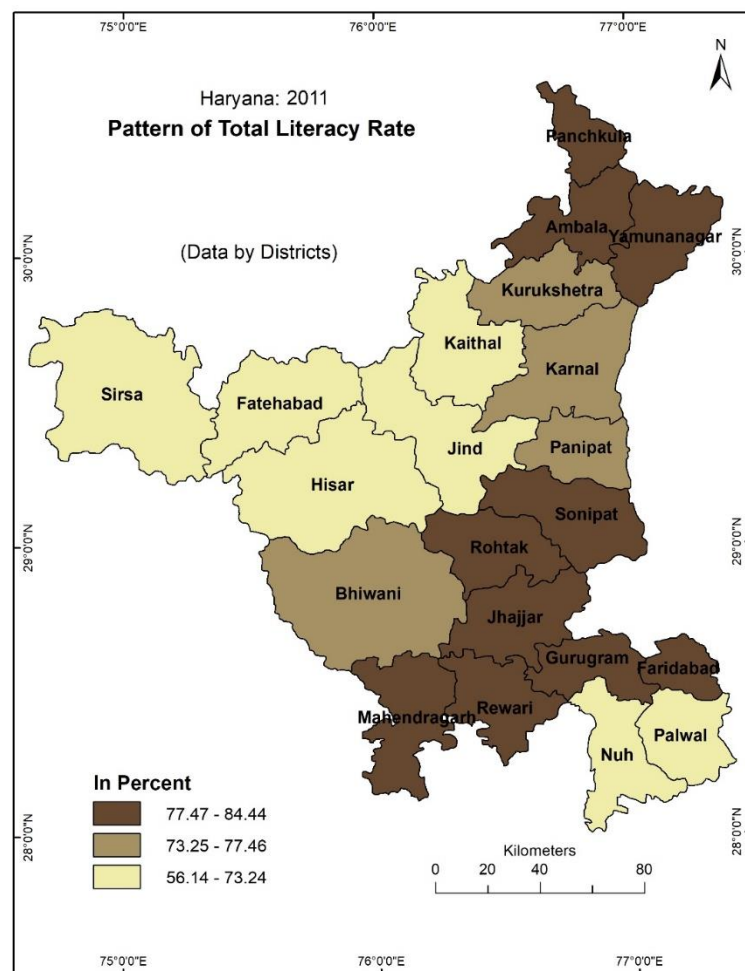


**Fig. 1**

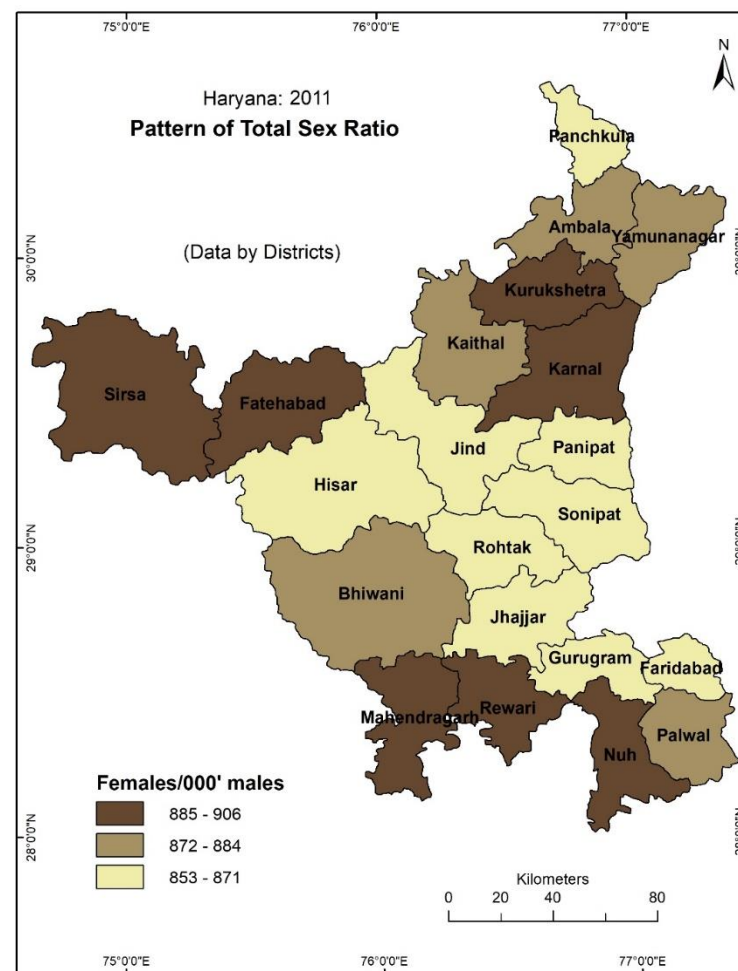
### Conclusion

As the two factors in this study are examined at the district level. The study discovered that in Haryana, there is a significant regional variance in the sex ratio and literacy rate. Gurgaon has the greatest overall literacy rate, while Mewat districts have the lowest. The lowest sex ratios were found in the Gurgaon and Panipat districts, whereas Mewat ranked top. Since the study shows that a spatial pattern contains significant negative correlations. The sex ratio is high in every agricultural and traditional civilization, while literacy rates are low. As a result, the sex ratio in industrial and contemporary civilization is low. The low sex ratio in industrial areas like Faridabad, Gurgaon, Panipat, and Sonipat is mostly due to immigration.





Map 2



Map 3



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