



Correlation between female literacy rate and sex ratio in Haryana (2011), India

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Abstract

Female Literacy rate and sex ratio are two important factors of population Study. Generally we say that literacy plays an important role in improving of sex ratio. Therefore, this paper tries to represent Correlation between Female literacy rate and sex ratio through case study of all districts of state of Haryana. Data was collected from census 2011. When we look at district wise data of Haryana about Female literacy and sex ratio, we find that Mewat district which is the most backward area of state has lowest Female literacy rate (37.38%) and highest sex ratio (906). while Highest Female literacy is in Gurgaon and Ambala (77.64%) having sex ratio (853) and (882) respectively. This study reveals that Spearman's Rank correlation between sex ratio and Female literacy is $R = -0.47$. This value shows that moderate Negative correlation between Female literacy and sex ratio.

Keywords: sex ratio, female literacy rate, correlation

Introduction

Female literacy plays a very important role in upliftment of the sex ratio. Literacy is defined as a person aged 7 years or above who can both read and write with understanding in any languages (According to 2011 census). While the crude literacy rate is the percentage of literate population to total population in a specific area. Literacy is one of the most important indicators of social development. Though education by itself does not generate socio-economic progress, lack of it's certainly being an impediment in the development process (Siddique, 1977) ^[4]. Gosal (1979) ^[1] analysis on spatial perspective in literacy in India reveal that high literacy is the characteristic of coastal area, urbanization, agriculture prosperity, service of armed force and the area where Christian population reside. Siddique (1977) ^[4] also analysis U.P. demographic, social and economic situation, the growth and spread, the distribution, and spatial variation and cause and historical consequences of literacy. It is essential for poverty reduction, mortality, curbing population growth, achieving gender inequality and ensuring sustainable development, peace and democracy (Godase, 2014) ^[3]. Literacy for All remains vision and slogan of government during different plans. Haryana has 14th rank in literacy in India. About 76.46% people are literate as per 2011 census. It was 67.91 % in 2001. There is variation in male female literacy being 85.38% and

66.71%. Although there is significant improvement in literacy but regional variation exist here. In the level of literacy, there is highest literacy in Gurgaon (84.4%) and lowest literacy in Mewat (56.1%) Sex ratio is an important indicator of social development which shows status of women in society. The sex ratio is defined as the number of females per 1000 males. Through this, we can measure extent of prevailing equity between male and female in a society in a given point of time. Hussan (2000) investigate the main determinants of recent decline in Sex Ratio in the state in term of net migration, mortality experience of the two sexes and the changing sex ratio at birth. Singh (2012) ^[5] analyzed that son preference for son, fertility decline and the pressure caused by small family, access to modern sex selection are the causes of lowering sex ratio in Haryana. Haryana although an economic developed state, occupies one of the lowest positions in term of sex ratio. It is contradictory that backward district has highest sex ratio 906. Economically and Industrialized district Gurgaon which stand top rank in literacy took last position in sex ratio 853.

Study Area

Haryana state is one of the most prosperous states of India. It's lies between 27°37' north to 30°53' northern latitude and 74°28' east to 77°36' eastern longitude.

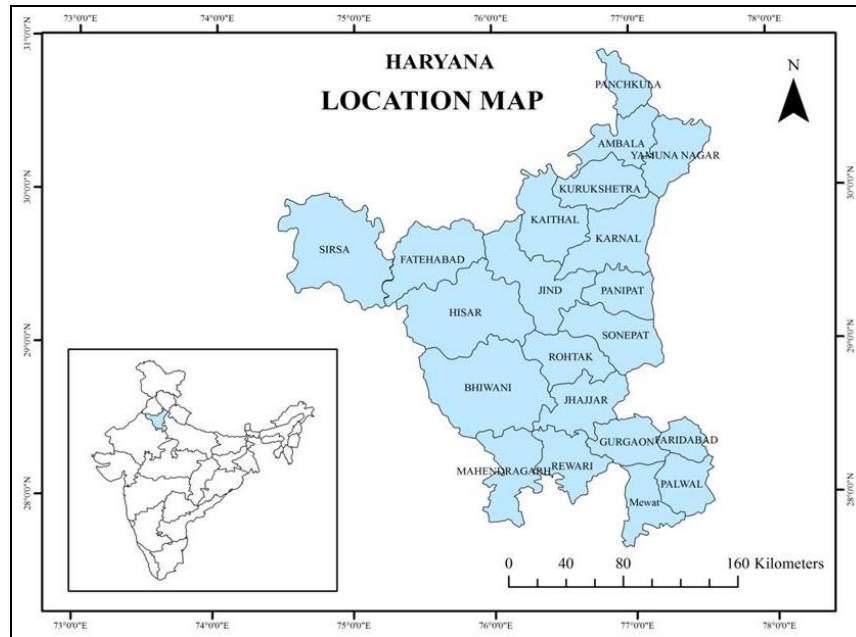


Fig 1

Haryana was carved out from Punjab in 1966 as a new state of India. On the northern side of it Punjab and Himachal Pradesh, Uttar Pradesh and Rajasthan are on east and south of Haryana and the western boundary is shared by Punjab and Rajasthan. The Total area is 44212sq.km.having 21 districts in 2011. Haryana state has total population of 2, 53, 51,462 persons in 2011, out of which 13,494,734 are male and 11, 856,728, female. The density of population recorded as 573 persons per sq. kilometer which is fifth highest in Indian states. The sex ratio recorded 877 females per thousand males, which is lowest in India. Haryana state has 76.64 percent literacy rate with differential of 85.38 percent male literacy and 66.77 percent female literacy.

Objectives

The present paper has following objectives:

1. To examine the spatial pattern of female literacy rate in Haryana.
2. To examine the spatial pattern of sex ratio in Haryana.
3. To analyze the correlation between spatial pattern of female literacy and sex ratio in the study region of Haryana.

Database and Methodology

This paper is based on secondary data source. Data was taken from Census of India 2011. To show the spatial pattern of Female literacy and sex ratio in Haryana. Haryana state is grouped into High, Medium and Low category on the basis of literacy and sex ratio. The correlation between literacy and sex ratio is analyzed by using the spearman's rank correlation method. The formula for computing spearman's rank correlation as follow:-

$$r = 1 - 6 \sum d^2 / n^3 - n$$

Spatial Pattern of Female Literacy and Sex Ratio

Table 1 show the overall scenario of literacy rate in 2011. In 2011 Female literacy rate was increased by 11.04%. There is low variation in literacy rate. The range of district is grouped into high Female literacy rate (Above 70), moderate Female literacy rate (60 -70) and low Female literacy rate (below 60) and sex ratio the range of district is grouped into High sex ratio (Above 890), High sex ratio (870-890) and High sex ratio (below 870).

Table 1: Spatial Pattern of Female Literacy Rate and Sex Ratio (2011) in Haryana

District	Female Literacy Rate	Sex Ratio
Mewat	37.38	906
Fatehabad	59.29	903
Rewari	70.54	898
Sirsa	61.16	896
Mahendragrah	67.25	894
Kurukshetra	69.18	889
Karnal	68.29	886
Bhiwani	64.6	884
Ambala	77.64	882
Kaithal	60.69	880
Palwal	56.4	879
Panchkula	77.48	877
Yamunanager	71.99	877
Faridabad	75.17	871
Hisar	62.31	871
Jind	61.58	870

Rohtak	71.19	868
Jhajjar	70.96	861
Panipat	68.23	861
Gurgoan	77.64	853
Sonipat	70.88	853
Haryana	66.67	877

Source: Provisional Census of India, 2011

High Female literacy rate (Above 70)

In this category Ambala and Gurugram (77.64) both has highest Female literacy by panchkula (77.48) Faridabad (75.17%), Yamunanagar (71.99), Rohtak (71.19), Jhajjar (70.96%), Sonipat (70.88%), Rewari (70.54%). It can be associated with well connected transport network and educational facilities.

Moderate Female literacy rate (60-70)

Kurukshetra (69.18%), Karnal (68.29%), Panipat (68.23), Mahendergarh (67.25), Kaithal (66.69), Bhiwani (64.60), Hisar (62.31), Jind (61.58), Sirsa (61.16) are included in it. There is well developed agriculture, availability of education facilities.

Low Female Literacy rate (Below 60)

Fatehabad (59.29), Palwal (56.40%), and Mewat (37.38%) are including in it. Predominance of backward population gives less attention towards education.

Pattern of sex ratio in Haryana (2011)

High sex ratio (Above 890)

Mewat (906), Fatehabad (903), Rewari (898), Sirsa (896), Mahendergarh (894) are included in this category. Discrimination against girl is not strong and lesser

awareness about scanning center may be the reason for it.

Moderate sex ratio (870-890)

Kurukshetra(889),Karnal(886),Ambala(882)Kaithal(880),Palwal(879),Panchkula(877),Yamunanagar(877),Faridabd(871), Hisar (871), Jind (870) lies in it. Is may be due to industrialized area and in spite of 70% above literacy, people thinking are not changed.

Low Sex Ratio (below 870)

Rohtak (868), Jhajjar (861), Panipat (861) Gurgaon (853), Sonipat (853) have lowest sex ratio. It is due to traditional thinking about girls, growths of pre natal diagnostic test are the reason behind it.

Correlation between Female literacy and Sex ratio

In simple words correlation means the relationship between two variables. One is dependent and another is dependent. Here Female literacy is independent variable and sex ratio is dependent variable. Variation in dependent variable can be explained through independent variable. Spearman's Rank Correlation method is used to find correlation between Female literacy and sex ratio. It is observed that there -0.47 is moderate negative correlation between Female literacy and sex ratio.

Table 2: Correlation between Female literacy and sex ratio in Haryana (2011)

District	Female Literacy Rate (FLR)	Sex Ratio (SR)	FLR Rank	SR Rank	Difference (d)	(d ²)
Mewat	37.38	906	21	1	20	400
Fatehabad	59.29	903	19	2	17	289
Rewari	70.54	898	9	3	6	36
Sirsa	61.16	896	17	4	13	169
Mahendragrah	67.25	894	13	5	8	64
Kurukshetra	69.18	889	10	6	4	16
Karnal	68.29	886	11	7	4	16
Bhiwani	64.6	884	14	8	6	36
Ambala	77.64	882	1	9	-8	64
Kaithal	60.69	880	18	10	8	64
Palwal	56.4	879	20	11	9	81
Panchkula	77.48	877	3	12	-9	81
Yamunanager	71.99	877	5	13	-8	64
Faridabad	75.17	871	4	14	-10	100
Hisar	62.31	871	15	15	0	0
Jind	61.58	870	16	16	0	0
Rohtak	71.19	868	6	17	-11	121
Jhajjar	70.96	861	7	18	-11	121
Panipat	68.23	861	12	19	-7	49
Gurgoan	77.64	853	2	20	-18	324
Sonipat	70.88	853	8	21	-13	169
Haryana	66.67	877			Summation	2264
					6*sum	13584
					Count	21
					n ³ -n	9240

Source: Computed by Author

$$r_p = 1 - \frac{6 \sum d^2}{n^3 - n}$$

$$r_p = 1 - \frac{6 * 2264}{9240}$$

$$r_p = 1 - 1.47012987$$

$$r_p = -0.47$$

Conclusion

Female literacy and sex ratio is important indicator for social development. This study shows that there are regional variation in Female literacy and sex ratio and there is moderate negative correlation between Female literacy and sex ratio being - 0.47. Gurgaon and Mewat are best example of this correlation. In Gurgaon, Ambala and Sonapat, there is high Female literacy (77.64), (77.64) and (77.88) but low sex ratio (882), (853) and Mewat vice versa. Government should take initiative steps and people should change their mindset towards girl.

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