

THE SPATIAL PATTERN OF FEMALE LITERACY RATE AND CHILD SEX RATIO – A GEOGRAPHICAL STUDY OF WEST BENGAL

^{1*}Uttam Garai, ²Sanjib Das, ³Paltu Mandal

¹Ex Student, ²Ex Student, ³Ex Student

¹Department of Geography,

¹Sidho-Kanho-Birsha University, Purulia, West Bengal, India

²The University of Burdwan, Burdwan, West Bengal, India

³Sidho-Kanho-Birsha University, Purulia, West Bengal, India

* Corresponding author: E-mail address: geoungarai@yahoo.com

Abstract: Literacy and sex ratio is an important demographic parameter by which could be judged the overall condition over any region or country. The female literacy has induced the progress of human society and also influenced the sex ratio. The sex ratio is an indicator of the balance between male and female population and it's a key for overall development amongst human being. The present study has analysed the spatial pattern of female literacy rate and the child sex ratio in the state of West Bengal. Result showed the regional disparity of the female literacy rate and the child sex ratio. The correlation between the female literacy rate and the child sex ratio is -0.095. It indicated the poor and negative relationship between female literacy rate and child sex ratio in West Bengal. The highest female literacy rate found in Kolkata and lowest in Puruliya district. On the other hand the highest child sex ratio has recorded in Murshidabad and lowest in Kolkata. In rural areas the highest female literacy rate found in East Midnapore and the lowest in Uttar Dinajpur, and the highest child sex ratio found in Murshidabad and lowest in East Midnapore. In urban areas the highest female literacy rate found in North 24 Parganas and lowest in Murshidabad. But the highest child sex ratio found in West Midnapore and lowest in Maldah of the urban areas.

Keywords: Literacy, Female literacy Rate, Child Sex ratio, Regional Disparity.

1. Introduction

Literacy is the only way for human as well social development to all over the world. According to Indian census of 2011, the persons belong to greater than 7 years old who can able to write and read in any language known as literate person. Literacy is an input for enlarging to any person for accessibility over the social, political, cultural development. Literacy is the only one major mediator for the progress of socio economic condition and which could be help the human development in any country (Singh, 2016).

The child sex ratio is another important socio economic parameter which has been influenced by literacy rate as like others demographic attributes (Kumari, 2017). The Child Sex ratio is defined the total number of female per thousand of male person within the age group of 0 to 6 year (Som and Mishra, 2014). The literacy is also helped to bring the equality of the sex ratio. The child sex ratio also helped to identify the present situation of girl child, gender inequality, infanticides and feticides. The present sex ratio determined the future possibility of age structure, marriage rate, birth and death, labour force, and migration (Kumar, 2013).

There are many previous work related to literacy rate and sex ratio have been done. A study was done by Inchani and Lai (2008) on the association of the child sex ratio and their mother's educational level. According to the study by Sugana (2011) found that the education of women is strongly induced to change the situation of society and reduced the inequalities to their family.

In West Bengal, the sex ratio was increased from 865 (1951) to 947 (2011) but the child sex ratio was declined from 927 in 2001 to 914 in 2011 (Som and Mishra, 2014). The present study has been focussed over the rural and urban patterns of female literacy rate and child sex ratio.

2. Study area

West Bengal is an eastern state in India and it is located between 21° 25' to 26° 50' north latitudes and 86° 30' to 89° 58' east longitudes (Fig. 1). The total area of this state is about 88,752 Sq. km. According to 2011 census, the West Bengal has been comprised about 7.55% of population in India. Its population density is 1029 persons per sq. km. and it has a second position in terms of population density among the all states. The total literacy rate is 77.08 % and the sex ratio is 947 in West Bengal (Census of India, 2011).

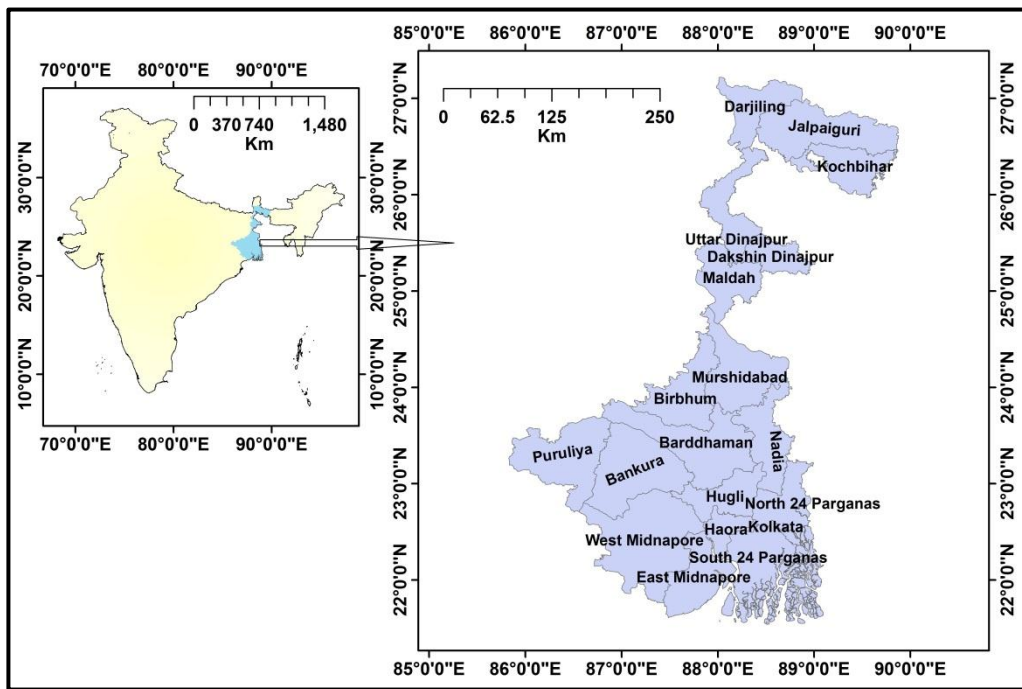


Fig. 1 Location of the Study area

3. Objectives

- Assessment of the female literacy rate in terms of spatially and also compared both rural and urban areas.
- To analyse the pattern of existing female literacy rate according to the level of literacy rate.
- To examine the spatial pattern of child sex ratio in West Bengal.

4. Materials and Methodology

The present study has been done on the basis of secondary data which were collected from the Census of India 2011. The female literacy rate and child sex ratio has been computed by using the M.S. Excel and also various thematic maps prepared with the help of ArcGIS 10.3 software. Finally, to analyse the correlation between the literacy rate and the child sex ratio has been used the Spearman's Rank Correlation method which calculated by using SPSS Software.

5. Result and Discussion

5.1 Spatial pattern of female Literacy rate

In present study, the West Bengal state has been categorized into three zones according to the rate of literacy among the females and also represented the result in terms of rural as well as urban areas. The wide disparity of female literacy rate has been shown in West Bengal. The highest female literacy rate has found in Kolkata where the rate of female literacy rate more than national level (65.46).The higher female literacy rate has been found in the districts namely Kolkata (77.63), North 24 Parganas (72.65), East Midnapore (71.94), Haora (70.76), Hugli (69.02), Darjiling (65.74) and where the Puruliya (43.46), Uttar Dinajpur (43.69), Maldah (48.23), Bankura (53.09) districts has been recorded a lowest rate of female literacy (Table 1, Fig. 2).

Table 1 District wise female literacy rate in West Bengal

District	Female Literacy Rate (%)	Rural Female Literacy Rate (%)	Urban Female Literacy Rate (%)
Darjiling	65.74	59.08	76.01
Jalpaiguri	58.32	54.10	69.61
Kochbihar	60.09	58.04	77.68
Uttar Dinajpur	43.69	40.52	67.11
Dakshin Dinajpur	59.48	56.26	78.85

Maldah	48.23	45.88	63.51
Murshidabad	54.04	53.13	57.72
Birbhum	55.91	54.11	68.14
Bardhaman	62.10	58.56	67.50
Nadia	63.72	59.34	74.91
North 24 Parganas	72.65	64.21	78.89
Hugli	69.02	64.75	75.89
Bankura	53.09	51.41	71.46
Puruliya	43.46	41.21	59.05
Haora	70.76	66.24	73.40
Kolkata	77.63	0.00	77.63
South 24 Parganas	62.39	59.70	70.21
West Midnapore	62.35	60.76	73.68
East Midnapore	71.94	71.56	74.84

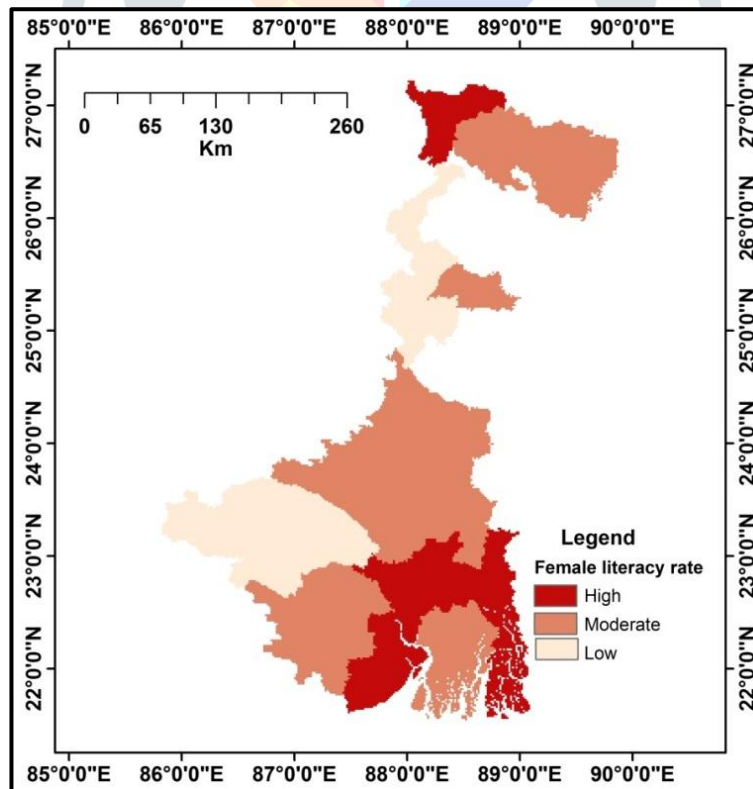


Fig. 2 District wise female literacy rate in West Bengal

5.1.1 Rural Female Literacy Rate

In rural areas, East Midnapore district has highest female literacy rate of 71.56 followed by Haora (66.24), Hugli (64.75), and North 24 Parganas (64.21) districts. The low child sex ratio in rural areas has recorded in Uttar Dinajpur (40.52) Puruliya (41.21) districts And rest of districts have the moderate female literacy rate in rural area (Table 1, Fig. 3).

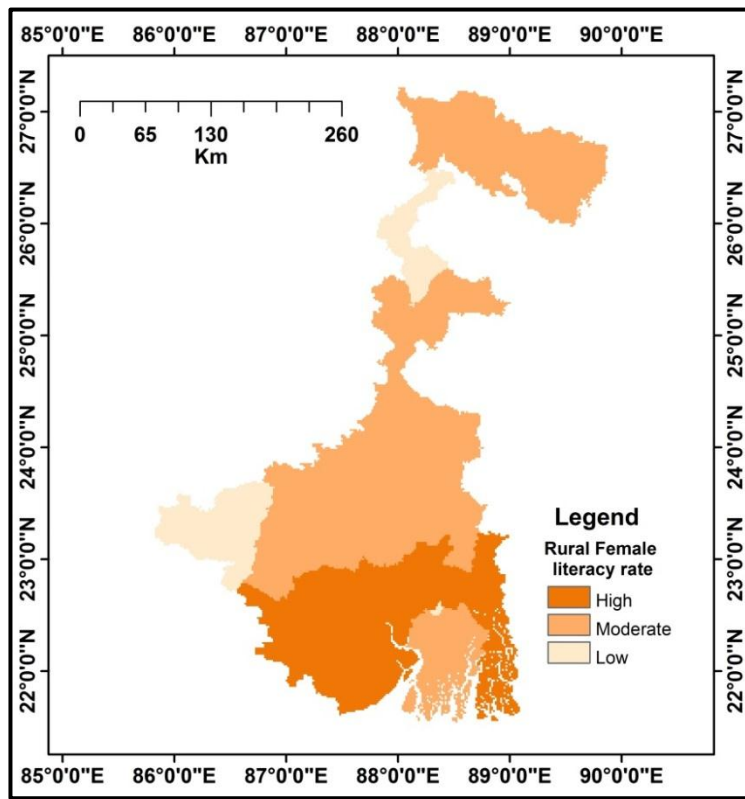


Fig. 3 Spatial distribution of Rural Female Literacy rate in West Bengal

5.1.2 Urban Female Literacy Rate

The highest female literacy is found in North 24 Parganas (78.89), Dakshin Dinajpur (78.85), Kochbihar (77.68), Kolkata (77.63), Darjiling (76.01), Hugli (75.89), and Nadia (74.91) etc. and lowest in Murshidabad (57.72) and Puruliya (59.05) districts. The rest of the district has found a moderate female literacy rate where female literacy rate is from 63% to 70% (Fig. 4, Table 1).

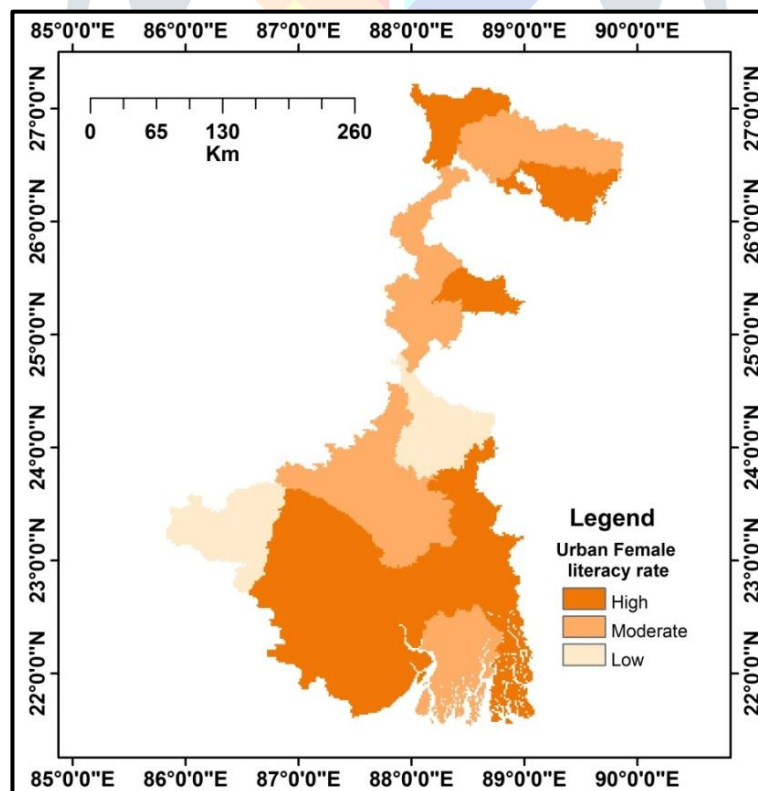


Fig. 4 Spatial distribution of Urban Female Literacy rate in West Bengal

5.2 Spatial pattern of Child Sex Ratio

The High child sex ratio is found in Murshidabad (968.23), South 24 Parganas (962.83), West Midnapore (962.61), Haora (961.94), Nadia (959.96), Birbhum (959.23), Dakshin Dinajpur (956.82) districts. But the lower child sex ratio has recorded in Kolkata (932.76), East Midnapore (945.95), Kochbihar (947.81), Bankura (948.61) district (Table 2, Fig. 5).

Table 2 Distribution of Child Sex Ratio in West Bengal

District	Child Sex Ratio	Rural Child Sex Ratio	Urban Child sex ratio
Darjiling	952.52	964.59	929.89
Jalpaiguri	955.39	957.30	949.32
Kochbihar	947.81	948.69	936.76
Uttar Dinajpur	953.11	952.90	955.36
Dakshin Dinajpur	956.82	956.70	957.96
Maldah	949.93	960.45	881.60
Murshidabad	968.23	967.74	970.20
Birbhum	959.23	962.26	933.86
Barddhaman	951.37	961.60	935.21
Nadia	959.96	961.91	953.36
North 24 Parganas	955.75	959.94	951.35
Hugli	952.32	954.36	948.49
Bankura	948.61	947.46	965.40
Puruliya	953.43	955.92	933.50
Haora	961.94	965.45	959.68
Kolkata	932.76	0.00	932.76
South 24 Parganas	962.83	964.48	956.77
West Midnapore	962.61	961.62	971.60
East Midnapore	945.95	944.53	957.72

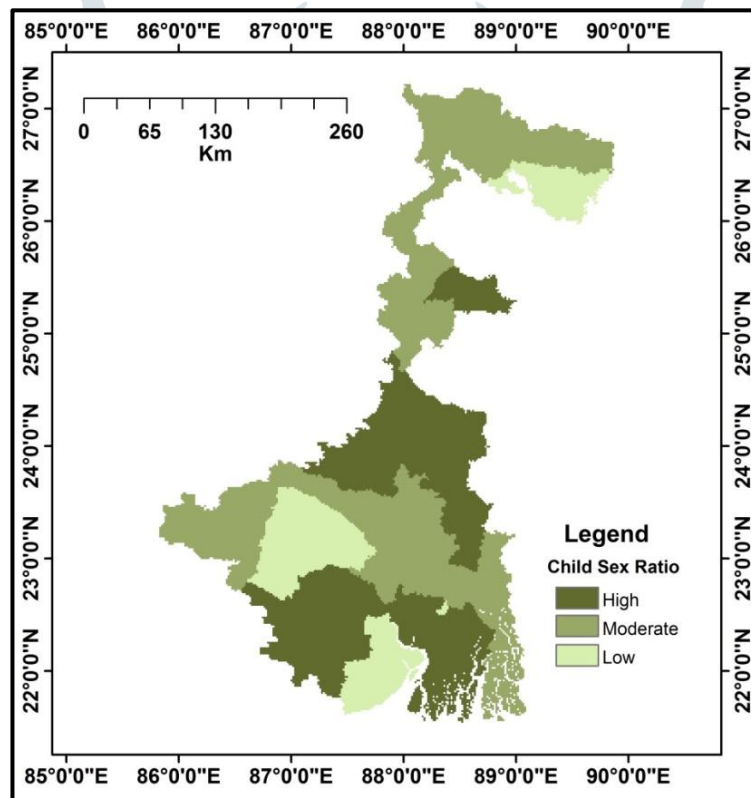


Fig. 5 District wise Child Sex Ratio in West Bengal

5.2.1 Child Sex Ratio in Rural areas

The present study has been analysed that the lower child sex ratio of rural area is found in the districts of East Midnapore (944.53) Bankura (947.46) Kochbihar (948.69). But the districts Murshidabad, Haora, Darjiling, 24Parganas, Birbhum, Nadia, West Midnapore, Barddhaman, Maldah has recorded higher child sex ration in the rural areas (Fig. 6).

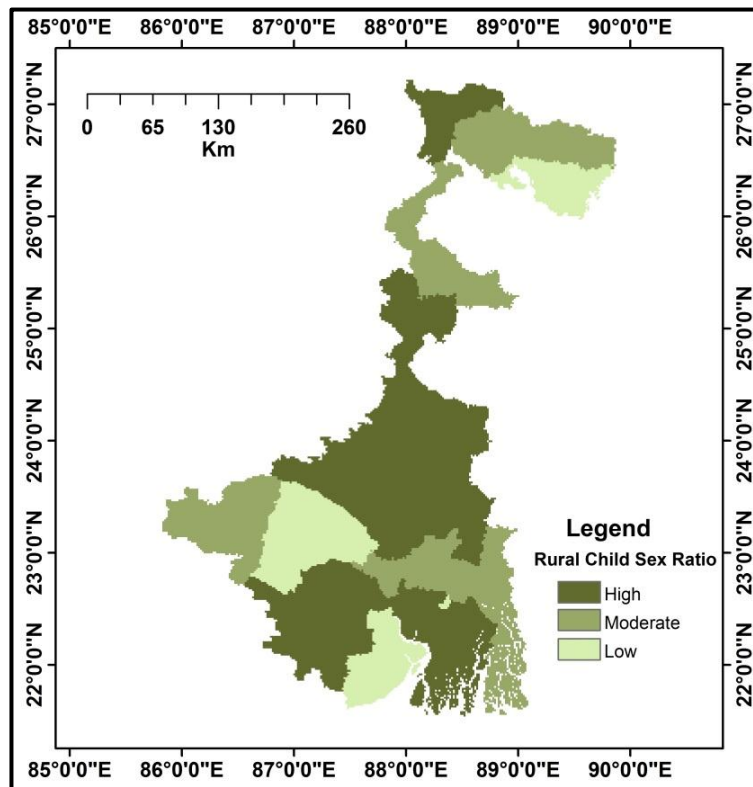


Fig. 6 Spatial distribution of Rural Child Sex Ratio in West Bengal

5.2.2 Child Sex Ratio in Urban areas

In our present study the urban area of the West Midnapore (971.60), Murshidabad (970.20), Bankura (965.40), and Haora (959.68) having higher child sex ratio and the other hand the district of Maldah (881.60), Darjiling (929.89), Kolkata (932.76), Puruliya (933.50), Birbhum (933.86), Barddhaman (935.21) have a lower child sex ratio (Fig. 7).

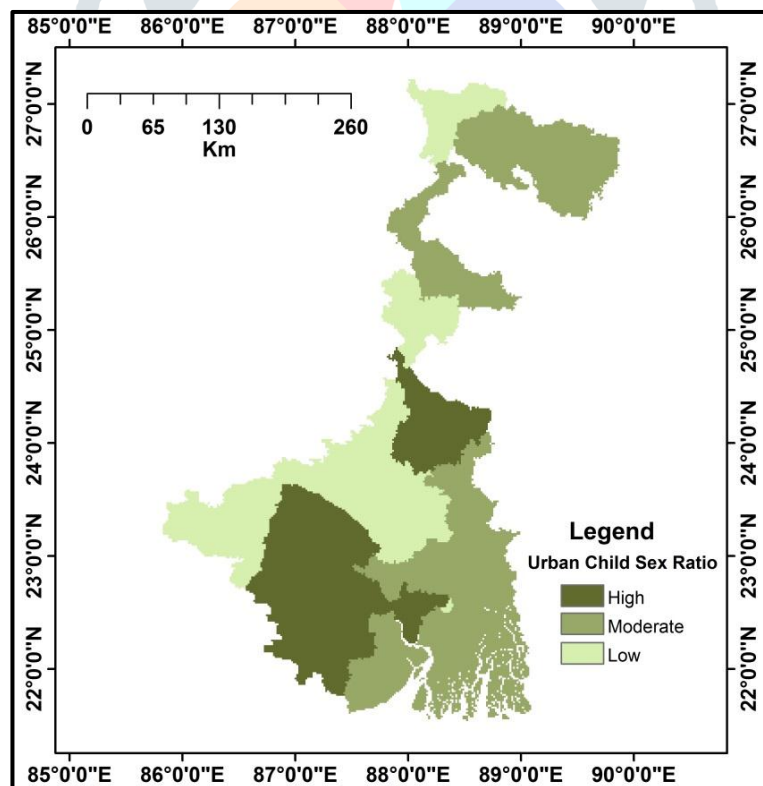


Fig. 7 Spatial distribution of Urban Child Sex Ratio in West Bengal

5.3. Relationship between female literacy rate and child sex ratio

The Spearman’s rank correlation has been used to find out the correlation between female literacy rate and child sex ratio in West Bengal. Result found that there is a very low and negative correlation i.e. -0.095 between female literacy rate and child sex ratio in West Bengal (Table 3). It means most of the districts have high female literacy rate and low child sex ratio. In our

present study observed higher female literacy rate and lower child sex ratio i.e. Kolkata district and also higher child sex ratio and female literacy rate is in Murshidabad.

Table 3 Rank correlation between female literacy rate and child sex ratio

		Female Literacy Rate	Child Sex Ratio
Spearman's rho	Female Literacy Rate	Correlation Coefficient	1.000
		Sig. (2-tailed)	.700
		N	19
	Child Sex Ratio	Correlation Coefficient	-.095
		Sig. (2-tailed)	.700
		N	19

6. Conclusion

The present study revealed the regional variation of the female literacy rate and child sex ratio in West Bengal in 2011. The highest female literacy found in Kolkata and lowest in Puruliya. In case of child sex ratio, the highest child sex ratio has in Murshidabad but the lowest in Kolkata. It means that both have an inverse relationship. The Kolkata is a capital of West Bengal and it is a so developed district where the female literacy rate is 77.63 % but having the lowest child sex ratio. This result indicated towards the failure to change the people's thinking to the girl child. The main reason behind that the availability of technology led to declining child sex ratio over the economically forward regions. This is very harmful towards the future generation where decreased the female population that failed to maintain the balance between male and female population. So, the reduction of female sex ratio to take some plane which have to immediate formulated and implemented.

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