

Spatial pattern and temporal change of sex ratio in West Bengal

¹ Sanchita Saha ² Dr. Gopal Chandra Debnath

¹ Research Scholar, Department of Geography, Visva-Bharati, Santiniketan, Kolkata, India

² Associate Professor, Department of Geography, Visva-Bharati, Santiniketan, Kolkata, India

Abstract

Sex ratio is defined as the number of females per 1,000 male populations. It is an important determinant which indicates the composition of population, quality of life, levels of development and level of participation in different economic activities of males or females of a particular region. In 2001 sex ratio in India was 933 which become 940 in 2011. On the other hand, child sex ratio was 927 in 2001 which has declined 919 in 2011. While in West Bengal general sex ratio has increased from 934 in 2001 to 950 in 2011. While the child sex ratio of West Bengal has declined from 960 in 2001 to 955 in 2011. This paper is an attempt to analyze the trends and spatial pattern of general sex ratio as well as child sex ratio and find out its impact in the society of West Bengal.

Keywords: Demographic Characteristics, Temporal Pattern, Sex Ratio, Child Sex Ratio, Human Development.

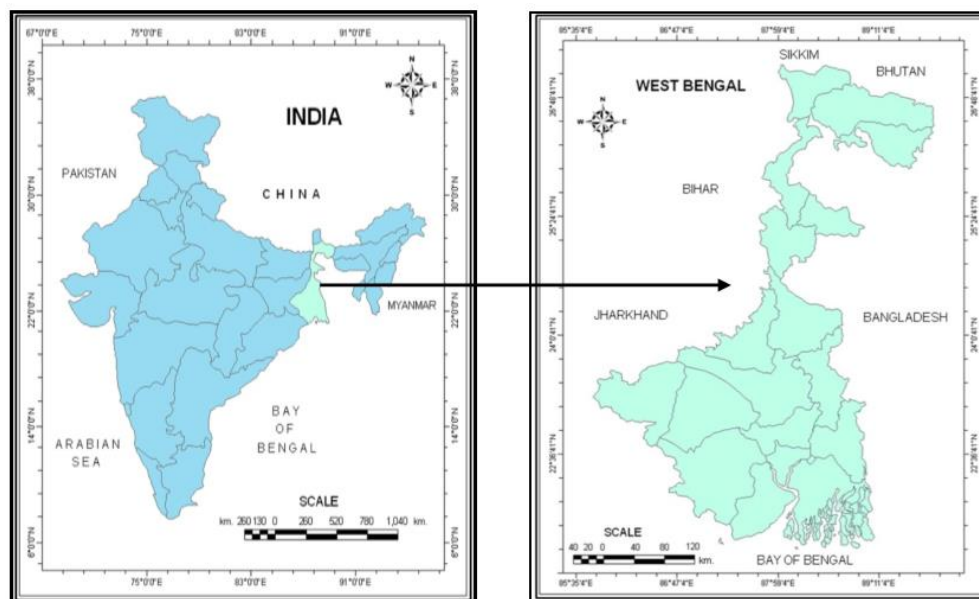
1. Introduction

Sex Ratio is one of the vital demographic attributes for any region. Its affect social, economic and political structure, for the influence birth and death rates, internal and international migration, marital status, manpower, the gross national product, planning regarding educational and medical services and housing as well as socio cultural and biological factors together influence the overall demographic composition of population and its sex ratio.

The sex ratio of West Bengal is continuously increasing after the independence from (865) in 1951 to (947) in 2011 census. On the other hand, the child sex ratio between the age group of 0–6 years is gradually declining from (1010) in 1971 to (950) in 2011 census. This declining trend observed in regions where the ratios had been sound. Developed states even recorded steeper falls. Literacy and economic development have resulted in sharper change.

2. Study Area

The state of West Bengal has been selected as a study area which is located between 21°25' to 26°50' north latitudes and 86°30' to 89°58' east longitudes with three international boundaries i.e., Bangladesh, Nepal and Bhutan. It occupies a geographical area of about 88,752 sq. km. (2.70 per cent of the India's total geographical area) and extending from the Himalayas in the north to the Bay of Bengal in the south. It is surrounded by Sikkim and Bhutan in the north, Assam and Bangladesh in the east, the Bay of Bengal in the south and Orissa, Jharkhand, Bihar and Nepal in the west. According to 2011 Census, its total population is 91,347,736 (7.55 per cent of India's total population), density is 1029 persons per sq. km. West Bengal is on the second among the Indian states.



Map 1: Location Map of the Study Area

3. Objectives

The study has been initiated to fulfill the following objectives:

- To analyse the spatial pattern of general sex ratio and child sex ratio from 1951 to 2011 in West Bengal.
- To analyse the trends and imbalance of rural urban sex ratio in West Bengal.
- To analyse the implications of declining sex ratio in West Bengal.

4. Data base and Methodology

The paper is based on secondary data sources. Maximum relevant data is taken from the 1991, 2001 and 2011 census reports, published by the Government of India, District Statistical Handbooks published by the Bureau of Applied Economics and Statistics, Government of West Bengal. Apart from these a number of articles published in various National and International journals have also been consulted for the purpose. The data are compiled from various secondary sources to build the original database. Statistical tables, technique and GIS mapping is used for showing the spatio-temporal variation of Sex ratio.

5. Trends of Over All Sex Ratio and Child Sex Ratio in West Bengal

Sex composition refers to the balance between male and female in any population. It can be expressed as a ratio

between the populations of two sexes. Sex ratio is defined as the number of females per thousand males in a human population. The sex ratio of West Bengal is continuously increasing after the independence from (865) in 1951 to (947) in 2011 census. Child sex ratio is a better indicator of women’s position, because it is very unlikely that they would be vitiated by sex-selective migration trends. Bias against girl children is an evident for example of female infanticide and feticide. It is an important cause for that west Bengal child sex ratio between the age group of 0–6 years is gradually declining from (1010) in 1971 to (950) in 2011 census. The child sex ratio is a sensitive indicator which shows the status of girl children.

Table 1: Over All Sex Ratio and Child Sex Ratio in West Bengal

Year	Over all Sex ratio in West Bengal	Over all Sex ratio in India	Child Sex ratio in West Bengal	Child Sex ratio in India
1951	865	946	–	983
1961	878	941	1008	976
1971	891	930	1010	964
1981	911	934	981	962
1991	917	927	967	945
2001	934	933	960	927
2011	947	940	950	914

Source: Census of India, 1951- 2011

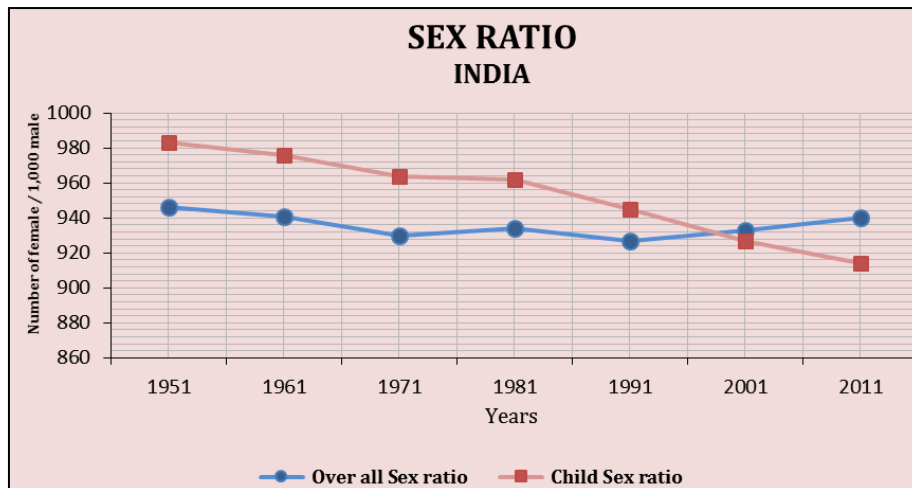


Fig 1

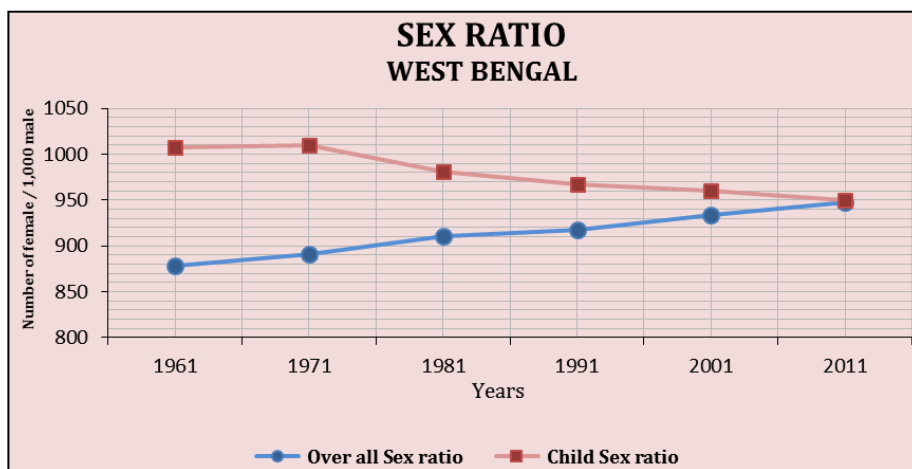


Fig 2

Table-1 shows that sex ratios of West Bengal and India have both experienced a huge fluctuated from 1951 to 2011. In 1951 the sex ratio of India was 946 but in 1961 and 1971 it has a declining trend and 1991 has recorded lowest sex ratio 927. During 1991-2011 sex ratio again increased from 927 to 940. From 1951 the sex ratio of West Bengal has a steady

growth. During 1951 it was 865 and in 2011 the sex ratio was improved to 947. The child sex ratio in India as well as in West Bengal has declining trend, during 1971 it was 964 and in 2011 it was 914 for India and for West Bengal it was 1010 and 950 respectively.

Table 2: District wise Trend of Sex Ratio in West Bengal (1951-2011)

Sl. No.	Districts	Trends of Over All Sex Ratio							Trends of Child Sex Ratio	
		1951	1961	1971	1981	1991	2001	2011	2001	2011
1	Bankura	981	981	958	964	951	952	954	953	943
2	Birbhum	974	973	968	962	946	950	956	964	952
3	Burdwan	888	858	886	897	899	922	943	956	947
4	Dahksin Dinajpur	884	932	941	946	944	951	954	966	948
5	Darjeeling	863	864	882	888	914	937	971	962	943
6	Howrah	810	808	838	873	881	906	935	956	964
7	Hugli	883	892	896	909	917	947	958	951	946
8	Jalpaiguri	825	854	887	910	927	942	954	969	949
9	Koch Bihar	855	890	916	935	935	949	942	964	948
10	Kolkata	593	630	662	741	799	829	899	927	930
11	Malda	966	965	948	949	938	948	939	964	945
12	Mursidabad	973	974	956	959	943	952	957	972	963
13	Nadia	937	948	948	946	936	946	947	972	955
14	North 24 Parganas	846	834	862	891	907	926	949	958	947
15	Paschim Mednipur	955	952	945	951	944	947	936	942	938
16	Purba Mednipur	955	952	945	951	944	961	960	959	952
17	Puruliya	983	973	963	957	947	954	955	964	947
18	South 24 Parganas	861	921	917	927	929	937	949	964	953
19	Uttar Dinajpur	884	888	908	931	921	938	936	965	946

Source: Census of India, 1951-2011

Table 2 shows district wise sex ratios of West Bengal from 1951 to 2011. In 1951 highest general sex ratio was recorded in Puruliya and lowest in Kolkata district. It is interesting to note that in highest sex ratio district has changed every year but the lowest sex ratio has remained unchanged. Among the districts Bankura, Birbhum, Malda, Murshidabad, Nadia, Mednipur and Puruliya has recorded a favourable general sex ratio while Howrah, Hugli, Barddhaman, Koch Bihar, Jalpaiguri and Uttar Dinajpur districts had recorded low sex ratio among the districts under Barddhaman administrative division. In 2011, Kolkata has recorded lowest sex ratio and Darjeeling has recorded the highest general sex ratio in West Bengal.

According to census 2011 West Bengal child sex ratio was 950. The highest child sex ratio was recorded in Howrah with 964 and lowest in Kolkata with 930 in the census year of 2011. Birbhum, Murshidabad, Howrah, Nadia, South 24 Parganas, East Mednipur has recorded a higher child sex ratio while the district like West Mednipur, Kolkata, Bankura, Darjeeling was recorded the low child sex ratio in West Bengal (Map no.- 3).

6. Spatial Pattern of Sex Ratio of West Bengal 2011

According to census 2011 West Bengal sex ratio was 947 numbers of females per thousand of male population. But the district level sex ratio is varies from district to district ranges

from 950 to 940. All 19 districts of West Bengal are divided into three categories as following: (Map no.2)

6.1 High Sex Ratio

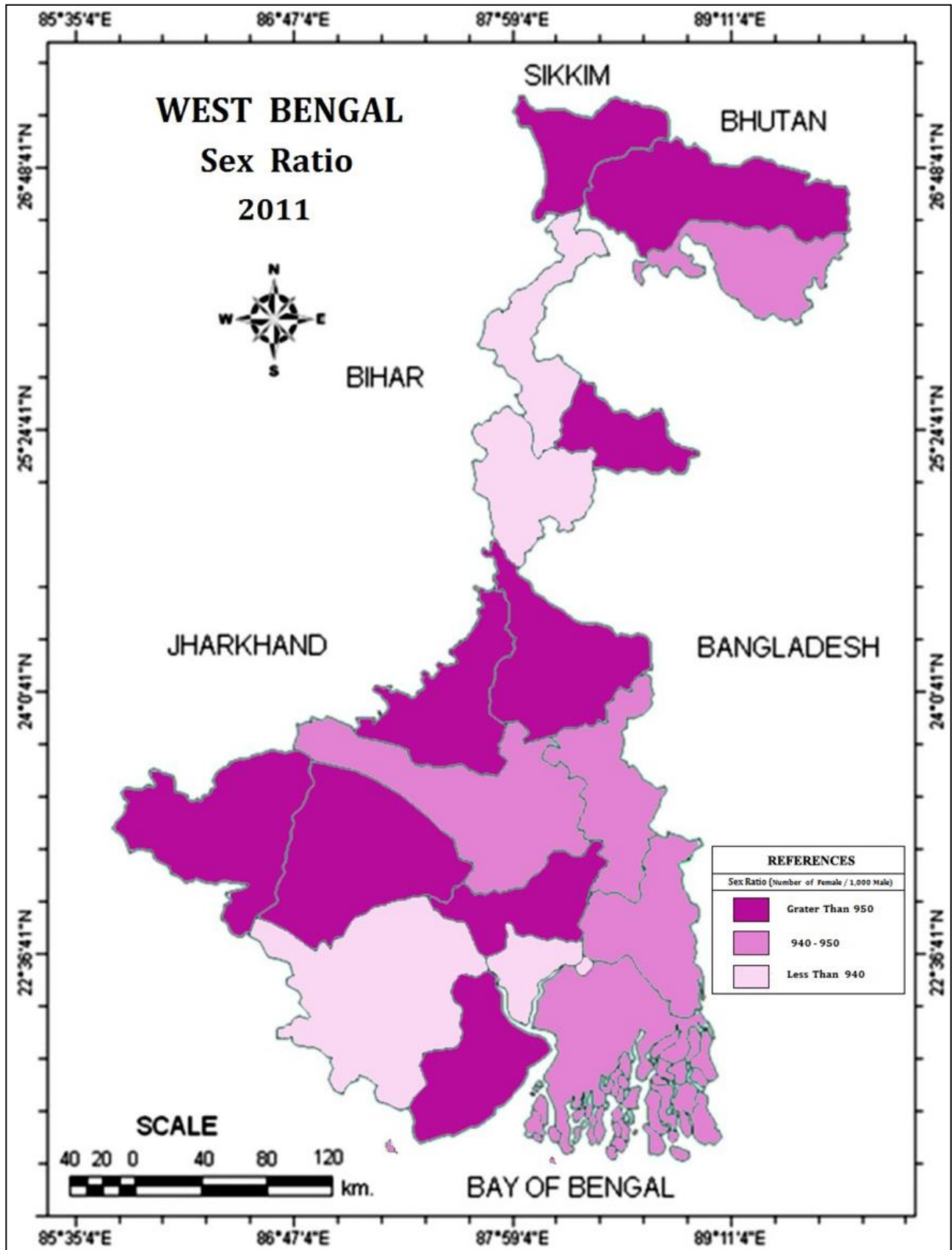
The districts which have the sex ratio above 950 are included in this category. High sex ratio was recorded in the districts of Birbhum, Bankura, East Mednipur, Hugly, Murshidabad, Dakshin Dinajpur, Jalpaiguri, Darjeeling and Puruliya.

6.2 Moderate Sex Ratio

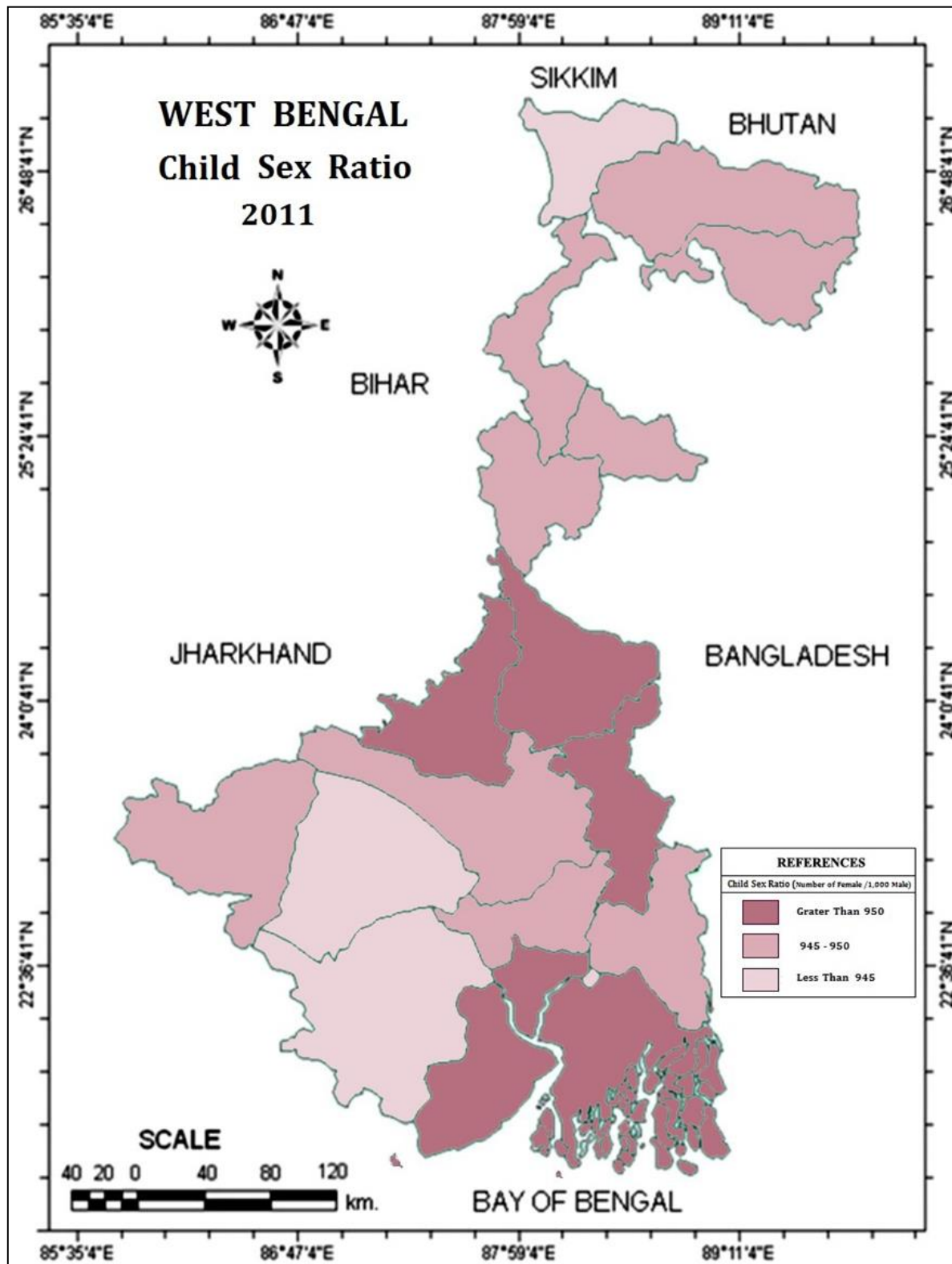
The districts which have the sex ratio ranges from 940 to 950 are included in the moderate category. Moderate sex ratio was recorded in the districts of Burdwan, Cooch Behar, Nadia, North 24 Parganas and South 24 Parganas.

6.3 Low Sex Ratio

The districts which have the sex ratio below 940 are included in this category. Howrah, Uttar Dinajpur, Malda, West Mednipur, Kolkata district was recorded the lowest sex ratio in West Bengal.



Map 2



Map 3

7. Decadal Variation of Rural- Urban Sex Ratio in West Bengal, 1971-2011

From 1971 to 2011 rural sex ratio is always greater than the urban sex ratio and the difference between rural-urban sex ratio is also high. In the year of 2011, the difference of rural-urban sex ratio is minimum, which is a good sign of improvement in the history of sex ratio in West Bengal.

Table 3: Decadal Variation of Rural-Urban Sex Ratio West Bengal

Year	Sex Ratio (Number of female / 1,000 male)	
	Rural	Urban
1971	942	751
1981	947	819
1991	940	853
2001	950	893
2011	953	944

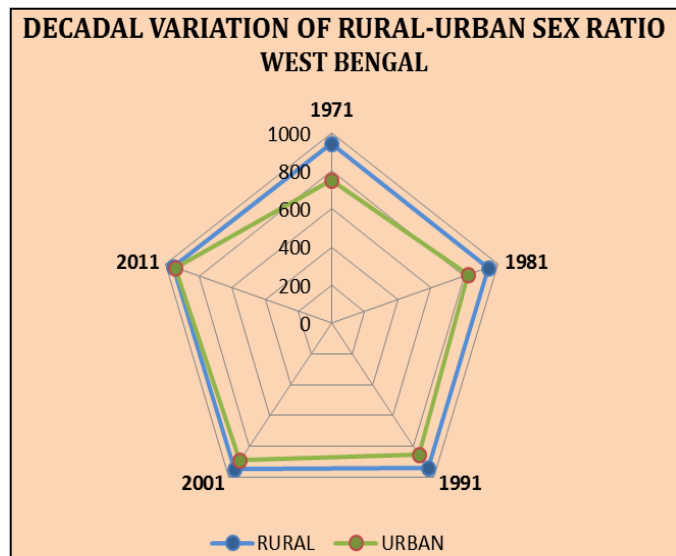


Fig 3

8. Rural and Urban Child Sex Ratio in West Bengal, 2001 & 2011

Table-4 shows that the child sex ratio in West Bengal has decreased to 950 in 2011 from 960 in 2001 census. The district level rural-urban child sex ratio is varies from district to district. In 2001 census, eight districts have recorded low child sex ratio than the state average e.g Bankura, Burdwan, Howrah, Hugli, Kolkata, North 24 Parganas, Paschim Mednipur and Purba Medinipur. In rural areas, five districts have reported low rural child sex ratio and in urban areas, five districts have reported lower urban child sex ratio than the

state average. In 2011 census, 14 districts have recorded low child sex ratio than the state average e.g. Kolkata, Purba Medinipur, Hugli, Bankura Birbhum, Burdwan, puruliya, North 24 Parganas, Darjeeling, Jalpaiguri, Koch Bihar, Malda, Uttar Dinajpur, Dakshin Dinajpur. In rural areas, eight districts have reported low rural child sex ratio, while, in urban areas, fourteen districts have reported lower urban child sex ratio than the state average. Main causes of declining child sex ratio are female foeticide, son preference and gender inequality. The sharp decline in child sex ratio is dangerous symbol of girl child deficit. It has shown an alarming sign of inequality in child population. The deficit in girl child population, leads to serious demographic imbalance and difficult social consequences (Ghosh and Manna, 2013).

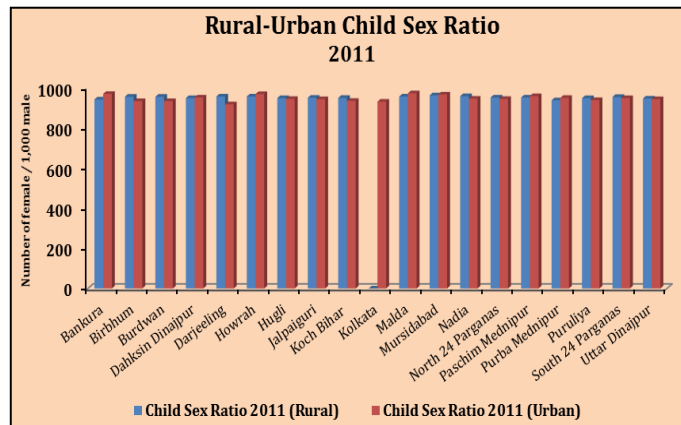


Fig 4

Table 4: Rural and Urban Child Sex Ratio in West Bengal (2001 & 2011)

Sl. No.	Districts	Child Sex Ratio 2001			Child Sex Ratio 2011		
		Total	Rural	Urban	Total	Rural	Urban
1	Bankura	953	952	969	943	941	969
2	Birbhum	964	965	950	952	955	933
3	Burdwan	956	958	953	947	955	933
4	Dahksin Dinajpur	966	966	961	948	948	951
5	Darjeeling	962	968	942	943	956	917
6	Howrah	956	962	948	964	956	968
7	Hugli	951	957	936	946	948	944
8	Jalpaiguri	969	969	970	949	950	943
9	Koch Bihar	964	963	971	948	949	934
10	Kolkata	927	NA	927	930	NA	930
11	Malda	964	965	943	945	956	972
12	Mursidabad	972	972	966	963	962	966
13	Nadia	972	972	967	955	958	945
14	North 24 Parganas	958	963	950	947	951	944
15	Paschim Mednipur	959	959	958	952	951	958
16	Purba Mednipur	942	941	955	938	937	949
17	Puruliya	964	967	932	947	948	938
18	South 24 Parganas	964	965	955	953	954	948
19	Uttar Dinajpur	965	967	936	946	946	943
	WEST BENGAL	960	963	948	950	952	943

Source: Census of India 2001 & 2011

9. Impact of Declining Sex Ratio in West Bengal:

1. Early marriage of females before the legal age of 18 years increased fertility and population growth. Because they conceive repeatedly for the desire of a son which adversely affects on their health.
2. Malnutrition and iron deficiency anaemia are the common causes of nutritional deficit among children where the frequency of child bearing is high among mothers.
3. In 2011 the child sex ratio of West Bengal was 950 which was 1010 in 1971. Son preference is a main culprit for

declining child sex ratio which creates male dominating society. This society emerge social instability against the women violence.

4. Female foeticide is the main cause of declining child sex ratio. It is an alarming danger symbol of gender inequality in child population which creates serious demographic imbalance in our society.

10. Conclusion

In West Bengal, the general sex ratio has improved while the child sex ratio has declined from 1971 to 2011. In majority of the districts child sex ratio has drastically declined. Son preference is a main culprit for declining child sex ratio. Despite legal prohibitions and incentive-based schemes provided by the State and Union Government and different Non-government Organizations campaigning our society intention does not changed that a girl child should not be born. This gender inequality creates serious demographic imbalance in our society. Which emerge social instability against the women violence like rape, prostitution, female foeticide, sex selective abortion, trafficking of a girl child, marital rape etc. Women education and empowerment are only the way to balance demographic structure within our society.

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