Spatial Variation in Rural-Urban Sex Ratio of Thane District, Maharashtra - A Geographical Analysis

Amol S. Shinde[1], Nagnath I. Dhaygode[2]

[1]Assistant Professor in Geography, Walchand College of Arts and Science, Solapur M.S, India

[2]Assistant Professor in Geography, Walchand College of Arts and Science, Solapur M.S, India

Abstract: *Sex composition is a population refers to balance between male and female in any population. Sex composition is one of the significant demographic characteristics of population. In any population, distribution by sexes is generally unequal. The existing sex ratio in any area is determined by three basic factors. These are sex ratio at the time of birth, differences in the mortality rates of the two sexes, at different ages and differences in the migratory ethos of the two sexes (Cleark, 1960). The present study aims to examine the spatial pattern and fluctuation of rural urban sex ratio during 2001-2011.For the purpose of present study tahsil has been taken as a basic unit of investigation. The period selected for the present study is two decade from 2001-2011. The proposed study is entirely based on secondary data. Present analysis shows that males and females are unequal and also tahsil wise magnitude of rural-urban inequality varies in the study region. Sex ratio in general and rural-urban is computed formula and mainly FRUSR is method using for the Changing difference Value between in Rural-Urban Sex Ratio in 2001-2011. In fact, present rural –urban sex ratio shows opposite situation in 2011, compare to 2001 census. In 2001, we found rural sex ratio is higher than urban sex ratio, while as in 2011, rural sex ratio is higher than urban sex ratio.*

Keywords: Spatial variation, Sex composition, sex ratio, fluctuation, FRUSR,

1. Introduction

Sex ratio is an important social indicator which defined the number of females per thousand people. Sex ratio has great importance in the study of population because it is closely related to socio-economic condition of area. Sex ratio also influences the volume and nature of social need and employment and consumption pattern. Sex composition also influences fertility potential of the population, the labour participation and the types of jobs. The variations in sex ratio are to a large extent determined by three factors such as, sex ratio at birth, differentials in mortality rate in two sexes and sex selectivity among migrants. Sex composition is one of the significant demographic characteristics of population. The separate data for male and females are important for various types of planning and for the analysis of other demographic characteristics such as natulity, mortality, migration, marital status, economic characteristics etc. In all the demographic narratives the low sex ratios are taken as a stark indicator of the inferior position of women in India (Miller 1981; Basu 1992; Mayer 1999). Declining sexratio is an important phenomenon for demographer, sociologist, geographers, planners, medical and publichealth worker.In India, in general and child sex ratio is higher in rural areas than urban areas. Similar trend is observed in most of the states. In general, highest decline in sex ratio is recorded in urban areas. Drastic decline is observed in the urban areas of Harayana, Gujrat and Utter Pradesh, while, heavy loss is found inboth rural and urban areas of Punjab. Similarly in Maharashtra also, the magnitude of female child loss is higher, in rural areas than the urban areas. In the Indian context, a sex ratio of 950 and above can be considered as favourable. As per 2011, rural sex ratio is 934, while urban sex ratio is 936. Which shows interestingly rural – urban sex ratio remain adverse to female but, sex ratio is decreasing very rapidly in rural areas whereas it is slowly increased in urban areas of study area.

2. Materials and Methods

2.1 The Study Area

The Thane district is located between 18°42' and 20°20' north latitudes and 72°45' and 73°48' east longitudes. The area of the district is 9, 558 km². Fig. 1. The district is bounded by Pune and Ahmadnagar on the east, Nashik on the east and northeast, Valsad District of Gujarat state and Union Territory of Dadra and Nagar Haveli on the North. The Arabian Sea form The western boundary, while it is bounded by Mumbai City District and Mumbai on the southwest and Raigad District on the south. The average annual rainfall in the district is 2293.4 mm. The rainfall in the district increases from the coastal areas to the interior. The rainfall varies from 1730.5 mm at Mahim on the coast to 2588.7 mm at Shahapur in the interior. The coastal area, the average daily maximum temperature in summer is 32.9°C (maximum recorded at Dahanu is 40.6°C on 19 April 1955) and in winter average mean daily minimum temperature is 16.8°C (minimum recorded at Dahanu is analysis 8.3°C on 8 January 1945). But in the interior parts of the district, the average daily minimum temperature is slightly lower in the winter season and the average daily maximum temperature is higher in the summer. This is the third-most industrialized district in Maharashtra. The district is divided into the administrative tahsil: Kalyan, Bhiwandi, Ulhasnagar, Dahanu, Shahapur, Wada, Palghar, Talsari, Vasai, Jawhar, Mokhada, Murbad and thane.
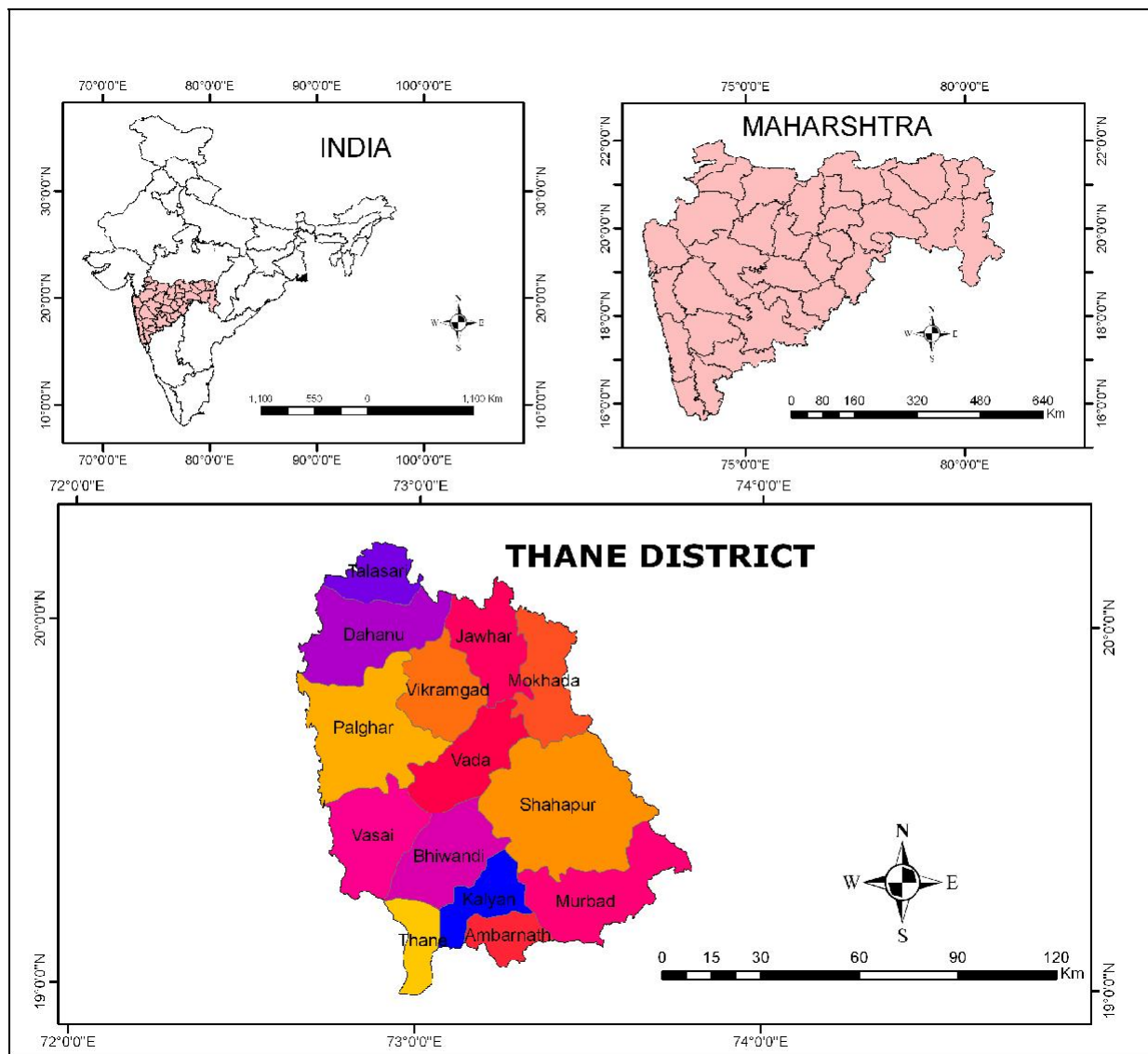
Figure 1: Location Map

1.1 Objectives

1) To examine the spatial pattern of rural and urban sex ratio in the study region.
2) To Study Changing difference Value in rural and urban between Sex Ratio areas (2001-2011).
3) To Analysis the fluctuation of rural-urban sex ratio during 2001 to 2011.

3. Research Methodology

The present study is entirely based on secondary data which is collected form Socio-Economic Review and District Statistical Abstract of Thane, Census of India, Census Handbook of Maharashtra and Thane District, District Gazetteer and also concern information is collected from various published thesis, articles, books and journals etc. The Study Region in tahsil has been taken as a basic unit of investigation for study purpose. The period selected for the present study is from 2001 to 2011. The collected data will be processed and presented by using appropriate quantitative and cartographic techniques. Sex ratio in general and rural-urban is computed and mainly FRUSR is Method Using for the Changing Difference between in Rural-Urban Sex Ratio in 2001-2011 by given using following formula

$$\text{Sex ratio} = \frac{Pf}{Pm} \times 1000$$

1)
Where, Pf= Total No. of females, Pm =Total No. of males

2) FRUSR = Each Tahsils (2011Rural -2001Rural) +/- (2011Urban 2001Urban)
Where, The fluctuation of rural-urban sex ratio +/- Positive /Negative value

4. Results and Discussion

Spatial pattern of rural-urban sex ratio (2001 -2011)

It was very interesting to note that the Sex ratio was increasing in urban area from 828 in 2001 to 859 in 2011, While as it continued to in rural area from 942in 2001to 954 in 2011 in the study area.

Table 1: Tahsilwise Rural-Urban Sex Ratio in Thane District from 2001 to 2011

Sr. No.	Tahsil	2001		2011		Changing difference Value between 2001-2011 (FRUSR)	
		Rural	Urban	Rural	Urban	Rural	Urban
1	Thane	-	832	896	865	-	33
2	Vasai	891	874	964	880	73	06
3	Palghar	887	848	957	819	70	-29
4	Dahanu	1005	946	1020	960	15	14
5	Talsari	1010	-	1024	-	14	-
6	Jawhar	1015	890	1015	954	00	64
7	Mokhada	975	-	984	-	09	-
8	Wada	911	910	946	913	35	03
9	Bhivandi	909	619	885	697	-24	78
10	Shahapur	949	918	969	919	20	-1
11	Murbad	966	896	966	868	00	-28
12	Kaylan	971	884	859	916	-112	32
13	Ullasnagar	-	881	-	875	-	-6
14	Ambernath	930	896	903	911	-27	15
15	Vikramgad	1033	-	1009	946	-24	-
	District Total	942	828	954	859	49	181

Source:
1) Census of India, 2001.
2) Provisional Population Totals, Census of India, 2011.
3) Socio-Economic of Abstract, Thane -2001 and 2011.

Table No.1 and Fig. No.2 indicates that the tahsil wise rural-urban sex ratio differential in the study region. As per 2001 census, rural sex ratio is highest in Vikramgad tahsil (1033) while, Palghar tahsil shows low rural sex ratio (887) as compared to district average. Rural sex ratio is Higer than the Urban sex ratio of the study region. Maximum Urban sex ratio was observed in Dahanu tahsil and minimum in Bhivandi tahsil i.e. 946, 619 respectively as compare to district average. Tahsil wise rural –urban sex differentials show that, 4 tahsils in above district average whereas 09 tahsils in below average with respect to rural sex ratio. Rural sex ratio is high in the tahsils such as, Dhanu (1005), Talasari (1010), Jawhar (1015) and Vikramgad (1033).because of the scarcity of water, uneven topography, tribal area and less fertile soil are the major geographical factors responsible for the less agricultural development. It is observed that sex selective out migration taken place to seeking jobs leads to high rural sex ratio in the tahsils. Urban sex differentials in the study region shows that, 03 tahsils in above district average, whereas 08 tahsils below the average (933). Low urban sex ratio is observed in tahsils Viz. Bhivandi (619). Remaining tahsils such as, Dhanu (946), Wada (910), Shahapur (918) show high sex ratio it is Predominantly agricultural irrigated developed tahsils, Male out migration for employment purpose from tribal area and agriculturally less developed tahsil towards agriculturally developed tahsils also because of large cost of living in urban areas, people who migrate to urban areas keep their spouses in villages leads to sex ratio is increasing in rural areas and decreasing in urban areas.

5. Spatial Pattern Of Rural-Urban Sex Ratio (2001)
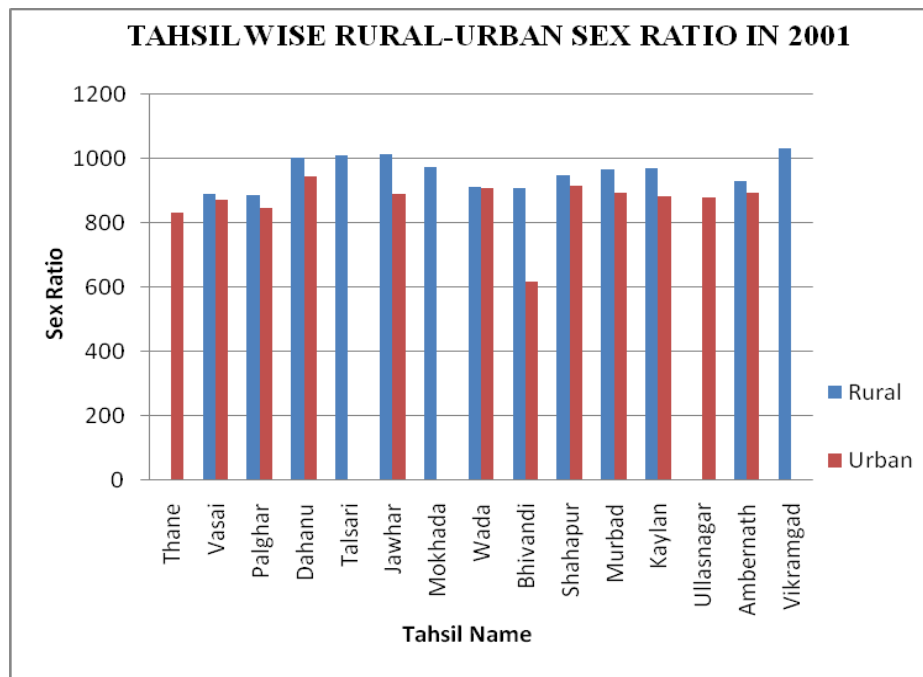
Figure 2: Tahsil Wise Rural-Urban Sex Ratio In 2001

5.1 Spatial Pattern of Rural-Urban Sex Ratio (2011)

In 2011, rural sex ratio is highest in the Talasari tahsil (1024) while, Kalyan tahsil shows lowest rural sex ratio (859), as compared to district average. Rural sex ratio is higher than the Urban sex ratio of the study region. Maximum Urban sex ratio was observed in Dahanu (960) tahsil and minimum in Bhivandi (697) tahsil. Respectively as compare to district average. Fig.No.3shows rural-urban sex ratio variation in 2011.Rural-urban sex ratio shows that,

Paper ID: SUB14793

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04 tahsils in above district average whereas 08 tahsils below average with respect to rural sex ratio. Rural sex ratio is high in the tahsils such as, Dhanu (1020), Talasari (1024), Jahwar (1015), Vikramgad 1003), Low sex ratio is observed in tahsils Viz., Vasai (966), Palghar (957), Mokhada (984), Wada (946), Shahapur (969), Murbad (966), Ambnernath (903) and Thane (896).Tahsil wise urban sex differentials shows that, 07 tahsils in above district average whereas, 05 tahsils below the average. Low urban sex ratio is observed is Bhivandi (697) tahsil. Remaining tahsils such as, Dhanu (960), Jahwar (954) Kalyan (916), Wada (913), Shahapur (919), Kalyan (916), Vikramgad (911) and Ambernath (911). This Reason because of the grater preponderance of males in rural to urban streams of migration (Singh, 1988). In the study region sex ratio reveals that urban sex ratio is greater than the rural sex ratio in some tahsils, because of

both male-female rural-urban migration increases in last decade. In fact, in the study region in the rural-urban migration males out number female, but the rate of rural female migration towards urban areas increases rapidly than the males. It is also observed in the study region that positive relation in between literacy and migration of female. In 2011, female literacy rate increases by higher rate than the male literacy, leads to increase in rural to urban migration of both male and females for the purpose of education and employment. Present analysis denotes declining sex ratio is the serious problem of the study region. The process of urbanization, migration pattern and other socio-economic factors affecting on sex ratio, in which Migration is the one of the important factor, which is affecting on imbalance in sex ratio in urban and rural areas.
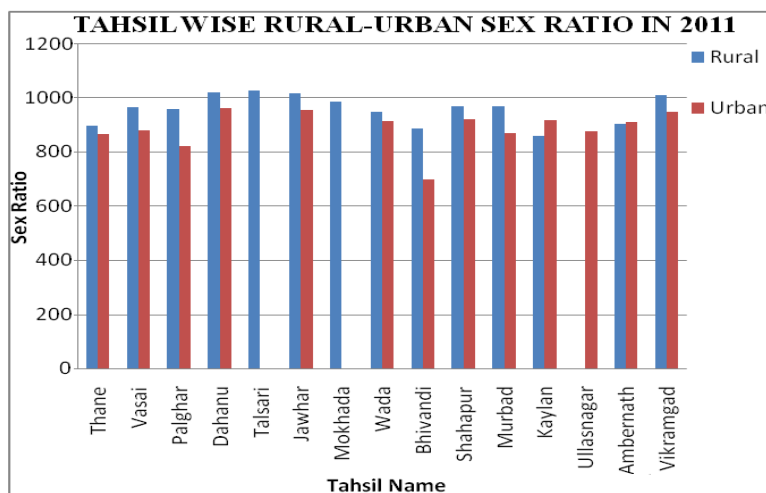

Figure 3: Tahsil Wise Rural-Urban Sex Ratio In 2011

5.2 Rural –Urban Sex Ratio Fluctuation from 2001 To 2011

Fig. No. 4 shows rural-urban sex ratio fluctuation in between 2001 to 2011. In fact, in Thane district we found drastic changes in general and rural-urban sex ratio in last decade. Rural sex ratio shows tahsil wise positive fluctuation in all the tahsils except out of Vasai (73), Palghar (70), Dahanu (15), Talasari (14), Wada Shahapur (20) and Mokhada (09) tahsil in the study area. The highest negative fluctuation in rural sex ratio is exist in Kalyan tahsil (-112), followed by

Ambernath (-27), and lowest negative fluctuation exist in Vikramgad and Bhivandi is (-24), .Positive Fluctuation in Urban sex ratio is observed in all the urban centers Four tahsil except negative fluctuation exists. Highest Positive Fluctuation in urban sex ratio is observed in Bhivandi tahsil (+78), followed by positive fluctuation found in the tahsils such as Jawhar (+64), Thane (+33), Kalyan (+32), Ambernath (+15), Dahanu (+14), Vasai (+06) whereas lowest positive change found in the Wada tahsil (+03).
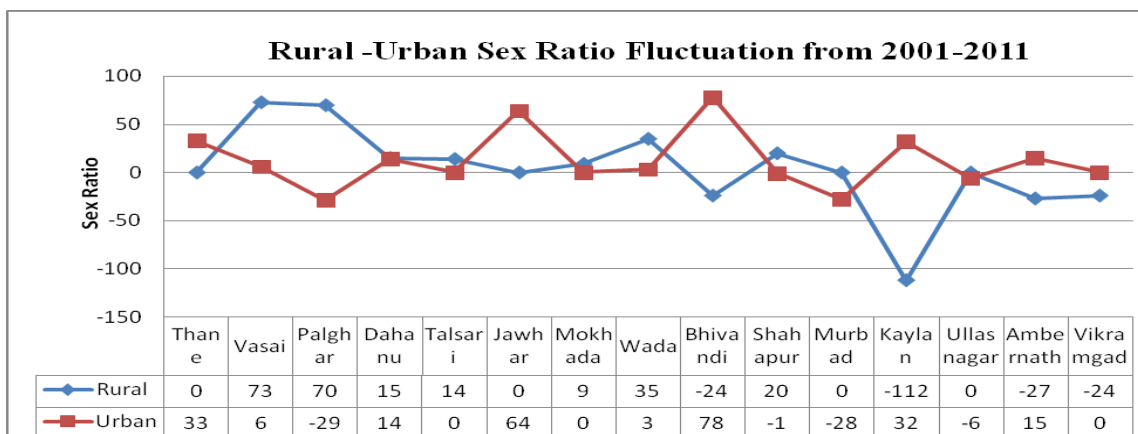

	Thane	Vasai	Palghar	Dahanu	Talsari	Jawhar	Mokhada	Wada	Bhivandi	Shahapur	Murbad	Kaylan	Ullasnagar	Ambernath	Vikramgad
Rural	0	73	70	15	14	0	9	35	-24	20	0	-112	0	-27	-24
Urban	33	6	-29	14	0	64	0	3	78	-1	-28	32	-6	15	0

Figure 4: Rural – Urban Overall Sex Ratio Fluctuation In Thane District From (2001-2011)
Source: Computed by authors

High and Positive Fluctuation in urban sex ratio is observed in Kalyan tahsil due to socio economically advanced, industrial and business center and source area of employment. The higher degree of urbanization and consequent lower proportion of joint families in western Maharashtra; as a result of development of non-agricultural activities, where large joint families are not considered an asset (Sawant and Khan, 1982).Along with socio-economic development and rapid urbanization in the study area, women work participation rate increases in secondary and tertiary activities such as govt. services, private sector, banking, insurance, industries and other services etc, it leads to more rural out migration of educated females towards urban centres in the study region. It is observed that sex ratio of workers and migrants affecting on the rural-urban sex ratio of the study region. Analysis shows generally sex ratio decreases in urban area, while increases in rural area. It is observed that inequality in between males and females and also tahsil wise magnitude of rural urban inequality varies in the study area. As per 2011, rural sex ratio is 954, while urban sex ratio is 859.Which shows interestingly rural-urban sex ratio adverse to female but, sex ratio is increasing very rapidly in rural areas whereas it is decreased in urban areas of study area.

6. Conclusion

1) Present analysis reveals that males and females are unequal and also tahsilwise magnitude of rural-urbaninequality varies in the study region. In fact, present rural–urban sex ratio shows opposite situation in 2011, compare to 2001 census so in 2001 and 2011 we found rural sex ratio is higher than urban sex ratio.
2) Sex selective out migration especially male for employment purpose from agriculturally less developed tahsil towards the agriculturally developed and urbanized tahsils leads to sex ratio is increasing in rural areas and decreasing in urban areas in 2001.Whereas female migration towards urban centers due increasing socio-economic status of female in urban area, availability of various educational and employment opportunities leads to sex ratio increasing in urban areas in 2011. It is observed that the proportion of female workers and migrants affecting on the imbalance in rural urbansex ratio of the study area in 2011.
3) Rural-urban sex ratio fluctuation clearly shows interestingly rural-urban sex ratio adverse to female but, sex ratio is increasing very rapidly in rural areas whereas it is slowly decreased in urban areas of study region during 2001 to 2011.
4) As per 2001 census, rural sex ratio is highest in Vikramgad tahsil (1033) while, Palghar tahsil shows low rural sex ratio (887) as compared to district average.Rural sex ratio is higher than the Urban sexratio of the study area Maximum urban sex ratio was observed in Dahanu tahsil and minimum in Thane tahsil i.e. 946, 832.
5) In 2011, rural sex ratio is highest in the Talasari tahsil (1024) while, Kalyan tahsil shows lowest rural sex ratio (859), as compared to district average. Maximum urban sex ratio was observed in Dahanu tahsil (960) and minimum in Bhivandi tahsil (697).

6) High and Positive Fluctuation in urban sex ratio is observed in Kalyan tahsil due to socio economically advanced, industrial and business center and source area of employment.
7) Rural-urban sex ratio fluctuation clearly shows interestingly rural-urban sex ratio adverse to female but sex ratio is decreasing very rapidly in rural areas whereas it is slowly increased in urban areas of study region during 2001 to 2011.
8) Rural-urban sex ratio is adverse to female, not only because of sex selective migration but also strong sonpreference and couples are moving towards a smaller family size and wants at least one or two sons, so they take the help of modern technology to detect the sex of foetus.

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