



SPATIO TEMPORAL VARIATION IN URBAN SEX RATIO OF PARBHANI, (MH), INDIA

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ABSTRACT

The sex ratio is the vital standard for the population and it is register for the socio-economic and physical factor of the area. Socio-economic status is important for estimating sex ratio of a geographical area and it is useful for the local and regional analysis. There is a large variation in the sex ratio in Maharashtra as district wise. The present study has considered 9 tehsil and 8 towns from Parbhani district during 1991 to 2011. The aim of the study is to determine sex ratio with spatial temporal variation of Parbhani district, data is collected from the census report of Government of India from 1991 to 2011 and the type of data which has been used is secondary data. The sex ratio of urban area of the district is 924 in 1991, 926 in 2001, and 958 in 2011 per thousand males respectively. A trend indicates the change in the sex ratio from 1901 to 2011 and also shows us the decadal variation in the sex ratio. Decadal female sex ratio from 1901 to 2011 shows us gradual increasing and decreasing order. The decadal sex ratio variation of the town and city from 1981 to 2011 also provides the data which shows increasing and decreasing order. There is gradual increase in sex ratio trends in tehsil and towns of Parbhani district from 1981 to 2011 and after wards increasing trends has been recorded. The data of sex ratio has been related with the Maharashtra and India.

KEYWORDS: Urban, Sex Ratio, Female, Male, Trends of Sex Ratio, Variation, Parbhani

1. INTRODUCTION

Sex ratio is one of the basic demographic characteristics of population, which is directly depends on birth death and marriage. It is expressed in terms of numbers of female with respect to per thousand males. The imbalances between two sexes create serious problem in community. It is one of the important factors in the development of country and has social as well as demographic implications. It also helps in analysis and planning of other demographic characters like migration, fertility, morality and economic structure, Yannawar et al., (2013). The slower growth and lower fertility are consequences of the major imbalances in sex ratio. For a proper understanding of demographic attributes in any region sex ratio analysis is crucial element. The sex ratio also influences marriage and growth rate of the population.

The India now has less female's population with respect to males within south in Asia and after china in global comparison. A sex selective abortion is one of reason of declining sex ratio in many countries. In recent decade India has seen decline in the child sex ratio which is very serious issues and need to be addressed. As per 1991 census, Maharashtra was the third largest state in the country in terms of population, however as per the conclusion of 2001 census Maharashtra stood as the second largest state in India Yannawar (2015). The state has the population that is 11.24 core. which was 9.29 present of the country population. The states sex ratio is 925. Which was lesser than the national average of 940 as census 2011.

The survey was carried out by Registrar General of India (RGI) throughout the globe and they found that there was decreasing women's sex ratio (Barakade 2012). During collection of census data in 2011 the population of female was 940 as compare with thousand males, in Maharashtra it found that there was decline in sex ratio from 972 to 927 in the year 1991 and 2011 census respectively. (Census of Maharashtra). The selected Parbhani district as study area of sex ratio during research we found that there was decrease in sex ratio, sex ratio for Parbhani district was always the highest whereas Maharashtra state recorded the lowest sex ratio throughout the investigated period. The highest decline trend since 1981 was observed in Parbhani district, while in the 2011, entire study area recorded lowest number of females per thousand males. Hence, for the detail and micro level analysis tehsil-wise, spatio temporal analysis has been made in the research, it also helped to examine the geographical and other factors affecting the sex ratio of the study region.

1.1. Study Area

The Parbhani district part of Marathwada region of Maharashtra and present between 18° 45' North to 20° 01' latitudes and 76° 13' East to 77° 26' East longitude. The total population of Parbhani districts was 1836086 persons according to 2011 census and male i.e., 942870 and female are 893216. The Parbhani district covers an area of 6214 sq. km which forms 2.11% of the total geographical area of Maharashtra state with average height 357.50 meters from mean sea level. In the northern side Buldhana, western side Jalna, southern side Beed and Latur and in the eastern side Nanded district are present. Parbhani district includes 9 tehsil Parbhani, Jintur, Gangakhed, Pathri, Purna, Palam, Selu, Sonpeth and Manwath.

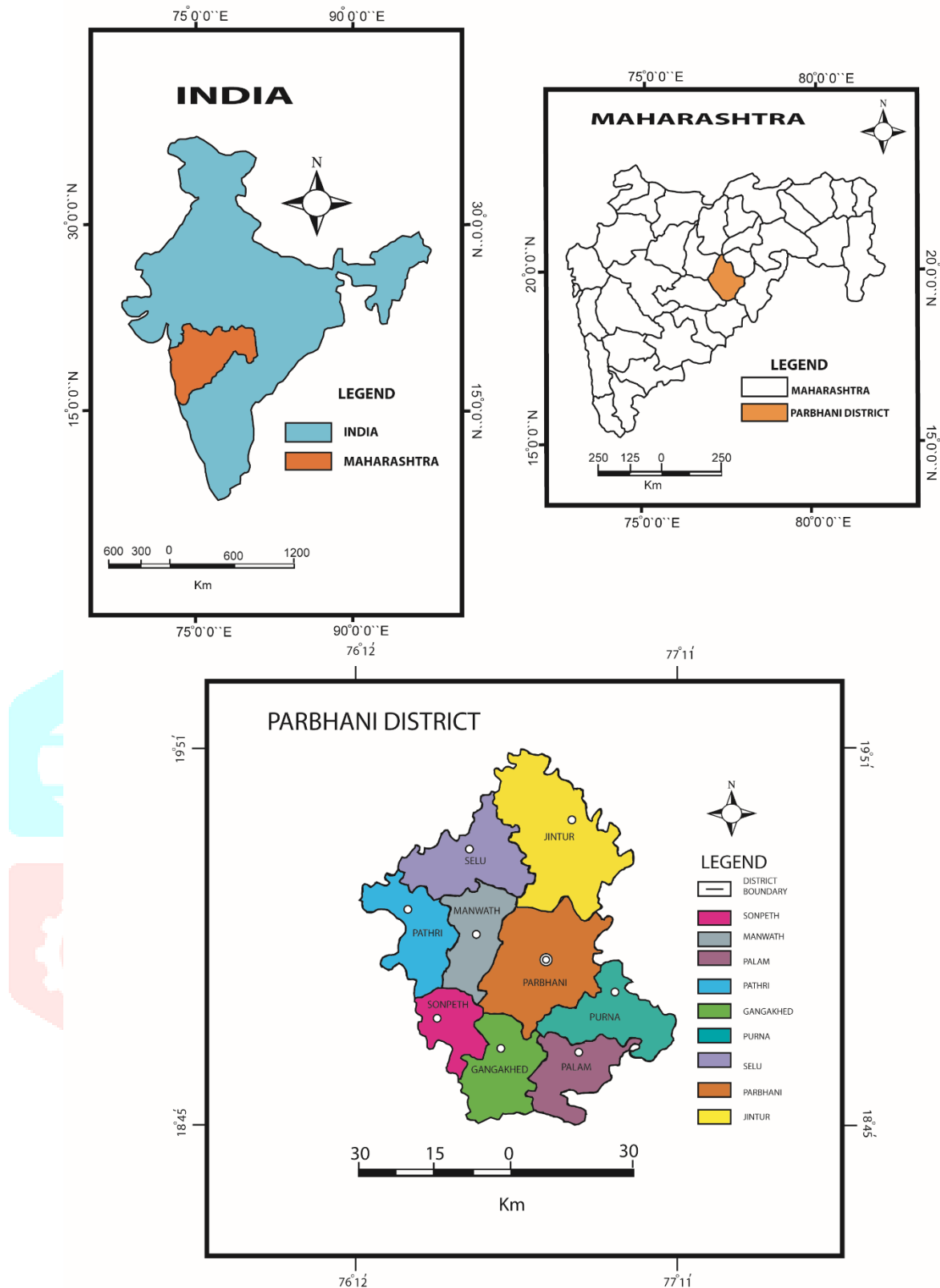


Fig. 1.1: Showing the location map of the Study Area

2. METHODOLOGY

In this study we have evaluated spatio–temporal variation in the sex ratio of the Parbhani district. The secondary data from 1991 up to 2011 is collected from the census of India 1901 to 2011. We have also used socio economic review district statistical abstract. In present study we have considered of 9 tehsil and 8 towns from the Parbhani district. We have collected the data processed by use of different statistical and quantitate techniques. The data has presented in the both tabular and graphical form. We have also correlated data of study area with Maharashtra and India Sopher (1974) and Sopher (1980).

Formula

$$SEX\ RATIO = \frac{Pf}{Pm} \times 1000$$

Pf = Total Number of Females

Pm = Total Number of Males

3. RESULTS

The proposed outcome of the current research has been expressed in the detailed in the following segment wise in the subsequent categories as listed in below thoroughly.

3.1 Trends of Sex Ratio

The table No.1 displays changing pattern of the sex ratio of Parbhani district from 1901 to 2011. The sex ratio of Parbhani always remained below 1000. The Parbhani district always has higher sex ratio than the Maharashtra and India. Within India sex ratio decreases from 910 to 941 females within 1901 to 1961 after that continuous increasing trend is observed Mundhe and Dhawale (2016) and Waghmare and Khadke (2014).

The sex ratio of Maharashtra state 978 in 1901 which has reached 929 females per 1000 males in the 2011 with increasing and decreasing trends in between years. From 1901 to 1941 sex ratio of Parbhani district shows decreasing trend from 978 to 949 after that trend is not constant some years show increase where as some years show decrease in the sex ratio. The recent sex ratio of Parbhani district is 947 according to 2011 census. Which is lowest of all the decades in 2011 census India and Maharashtra having sex ratio 943 and 929 respectively, Som and Mishra (2014) and Waghmare and Khadke (2017).

Table No.3.1: Trends of urban sex ratio in India, Maharashtra and Parbhani (1901 to 2011)

Sr. No	Year	India	Maharashtra	Parbhani
1	1901	972	978	996
2	1911	964	966	993
3	1921	955	950	978
4	1931	950	947	963
5	1941	945	949	960
6	1951	946	941	974
7	1961	941	936	969
8	1971	930	940	954
9	1981	934	937	968
10	1991	927	934	954
11	2001	933	922	958
12	2011	943	929	947

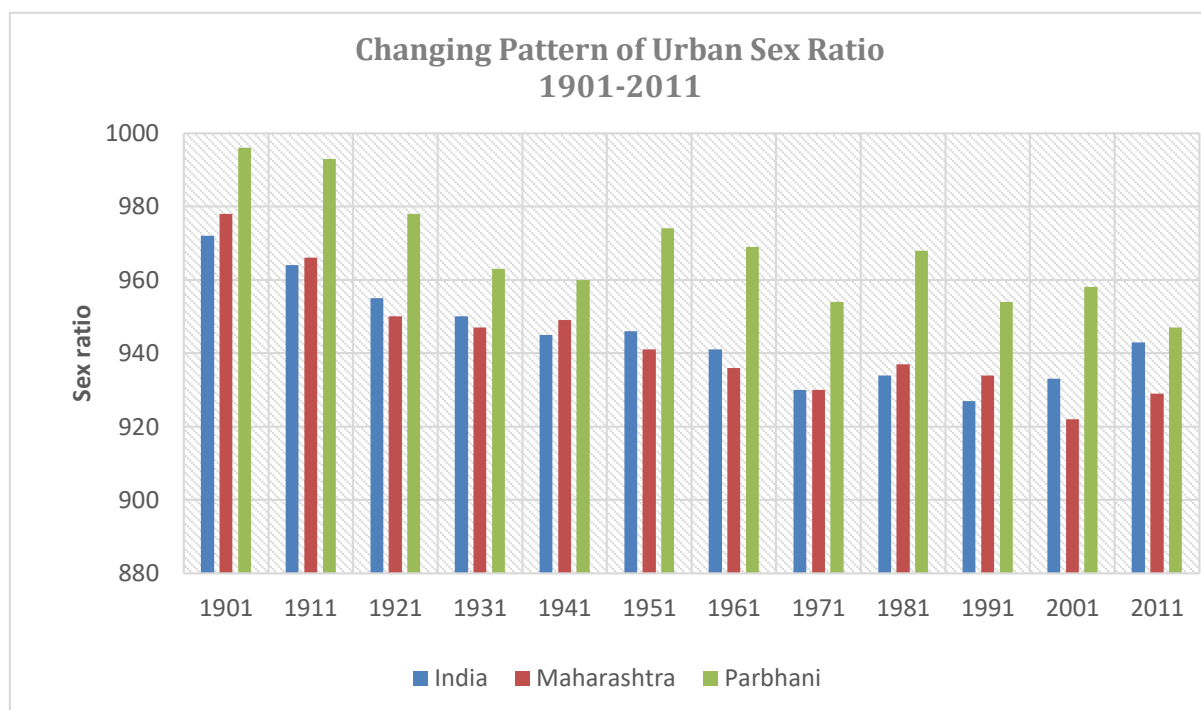


Fig. 3.1: Show the Changing Pattern of Urban Sex Ratio during Study Period of 1901-2011

The observed urban sex ratio of the Parbhani district during the decade of 1901 to 2011 is given in the table No. 2. The highest sex ratio though out the decades was shown by the 1901 census data and the exact proportion was observed i.e., 16918 females against 17029 males in this way it talks about the ratio of 993 females every 1000 males. The census data of 1971 observed the lowest sex ratio throughout the decade and it was clearly mentioned that 78879 females against 86736 males which produced a sex ratio of 909 females every 1000 males.

The decreasing trend observed during the census data of 1911 to 1931. Such as 973 females and 917 females per 1000 males in 1911 and 1931 census respectively. The increased sex ratio i.e., 9413 females against 51714 males observed in 1951 census data and produced a ratio of 956 females behind the 1000 males. The urban sex ratio data was slightly increased during the 1981 to 2011 census data. The observed data shows 909 females behind the 1000 males in 1971 census while 958 females every 1000 males observed in 2011 which shows gradual increase in sex ratio.

Table No. 3.2: Parbhani district urban sex ratio (1901 to 2011)

Sr. No.	Year	Males	Females	Total	Sex ratio	Decadal change	Females % of population
1	1901	17029	16918	33947	993	--	48.84
2	1911	19625	19101	38726	973	-20	49.32
3	1921	23518	22244	45762	946	-27	48.61
4	1931	32906	30172	63078	917	-29	47.83
5	1941	37542	34920	72462	930	13	48.19
6	1951	51714	49413	101127	956	25	48.86
7	1961	56846	52706	109552	927	-28	48.11
8	1971	86736	78879	165615	909	-18	47.63
9	1981	125834	117223	243057	932	22	47.83
10	1991	189179	174861	364040	924	-7	48.03
11	2001	250462	234724	485186	937	13	48.38
12	2011	290984	278822	569806	958	21	48.93

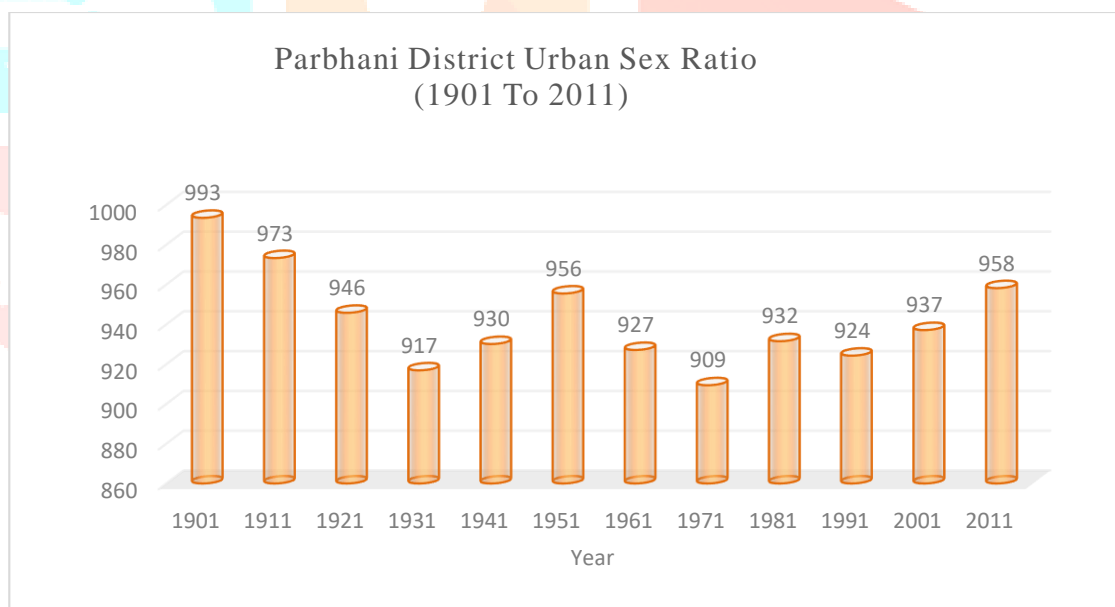
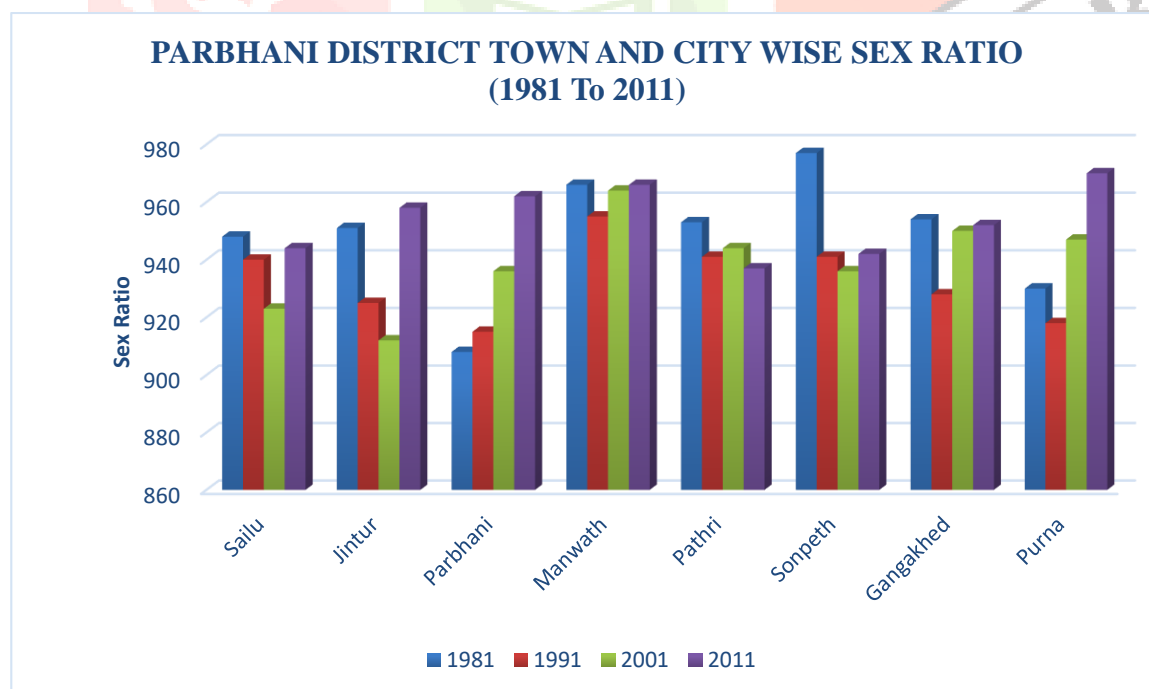
**Fig. 3.2:** Demonstration of the Urban Sex Ratio during Study Period of 1901-2011

Table No.3.3: Parbhani district town and city wise sex ratio (1901 to 2011)

Sr. No	Town	Sex Ratio				Changes of Sex Ratio			
		1981	1991	2001	2011	1981 - 1991	1991 - 2001	2001 - 2011	
1	Selu	948	940	923	944	-8	-17	21	
2	Jintur	951	925	912	958	-26	-13	46	
3	Parbhani	908	915	936	962	7	21	26	
4	Manwath	966	955	964	966	-11	9	2	
5	Pathri	953	941	944	937	-12	3	-7	
6	Sonpeth	977	941	936	942	-36	-5	6	
7	Gangakhed	954	928	950	952	-26	22	2	
8	Purna	930	918	947	970	-12	29	23	
	Parbhani	932	924	937	958	-8	13	21	

The town wise sex ratio of Parbhani district illustrated below. The Parbhani city is showing constant increase in sex ratio from 1981 to 2011 in contrast with other town and cities which are shows initial decreased and after that increasing trend is observed. According to 1981 census Sonpeth town is having highest (977) sex ratio whereas Parbhani city shows lowest value 908. Sex ratio in Selu, Jintur and Sonpeth towns shows decreasing trend from 1981 up to 2011 and after that increasing trend recorded in the 2011 census.

**Fig. 3.3:** Rally of the Town and City Wise Sex Ratio of study Period of 1901-2011

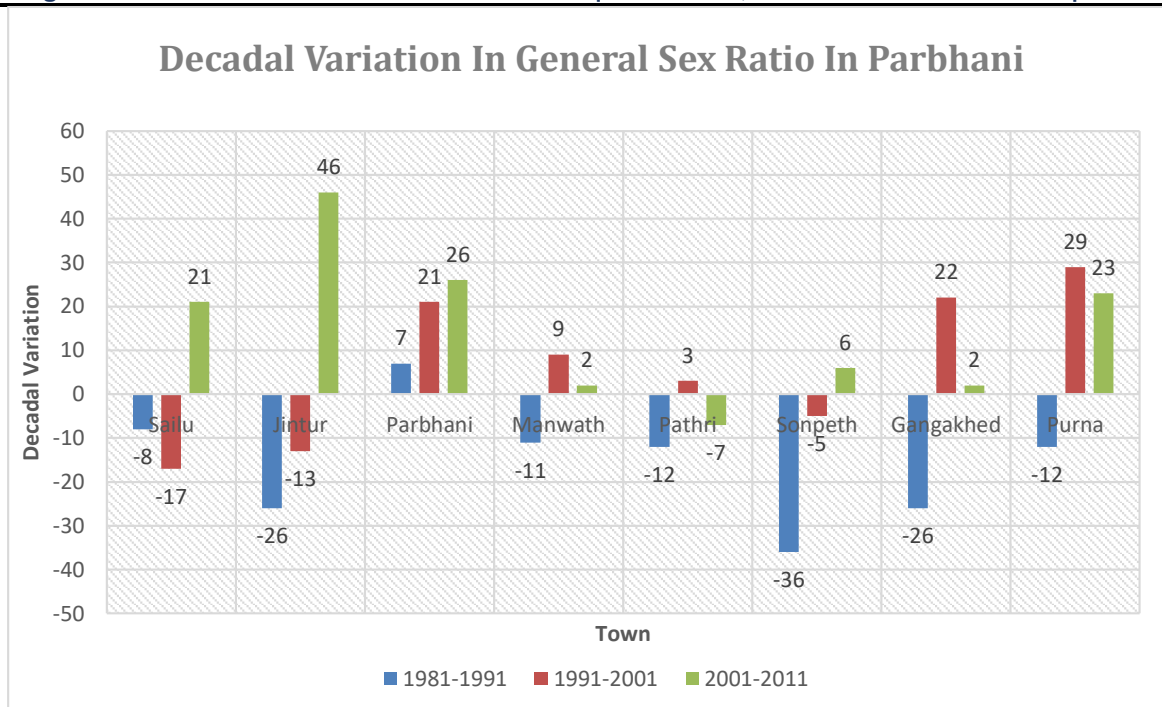


Fig. 3.4: Shows the Decadal Variation in General Sex ratio in Parbhani District

A simple 4 different types of trends are observed in sex ratio during the period 1981 to 2011 viz. (1) In three town namely Selu (-8, -17), Jintur (-26, -13) and Sonpeth (-36, -5) sex ratio decreased in 1981 to 2001 and in 2011 it increases 21, 46 and 6 for the town Selu, Jintur and Sonpeth respectively. (2) In Parbhani city, positive trend is observed in sex ratio from 1981 to 2011 (7, 21 and 26). (3) Towns like Gangakhed (-26, 22 and 2), Manwath (-11, 9 and 2) and Purna (-12, 29 and 23) shows negative sex ratio for the year 1981 to 1991, but from 2001 to 2011 it shows slightly positive value. (4) Pathri is the only town where sex ratio (-12, -13) for the period 1981 to 1991; increases in 2001 (from -13 to 3), but again in 2011 it decreases (from 3 to -7).

3.2 Spatial pattern of urban Sex Ratio of Parbhani

Parbhani district as a whole has 932, 924, 937, and 958 are number of females per thousand male populations in 1981, 1991, 2001 and 2011 respectively.

3.2.1 High Sex Ratio

In this category sex ratio above 947 has been included in it. The high sex ratio was recorded in the town are in 1981 Selu, Jintur, Manwath, Pathri, Gangakhed. In 1991 Manwath, 2001 Gangakhed, Manwath, and in 2011 Jintur, Parbhani, Manwath, Gangakhed, Purna.

3.2.2 Moderate Sex Ratio

In this category the sex ratio ranges from 900 to 947 was recorded. The moderate sex ratio was recorded in the town are as in 1981 Parbhani, Purna, in 1991 Selu, Jintur, Pathri, Parbhani, sonpeth, Gangakhed, Purna in 2001 Purna, Sonpeth, Pathri, Parbhani, Jintur, Selu and in 2011 Selu, Pathri, Sonpeth.

3.2.3 Low Sex Ratio

In this category the sex ratio below 900 are included. This category is nil in all the three decades in Parbhani town.

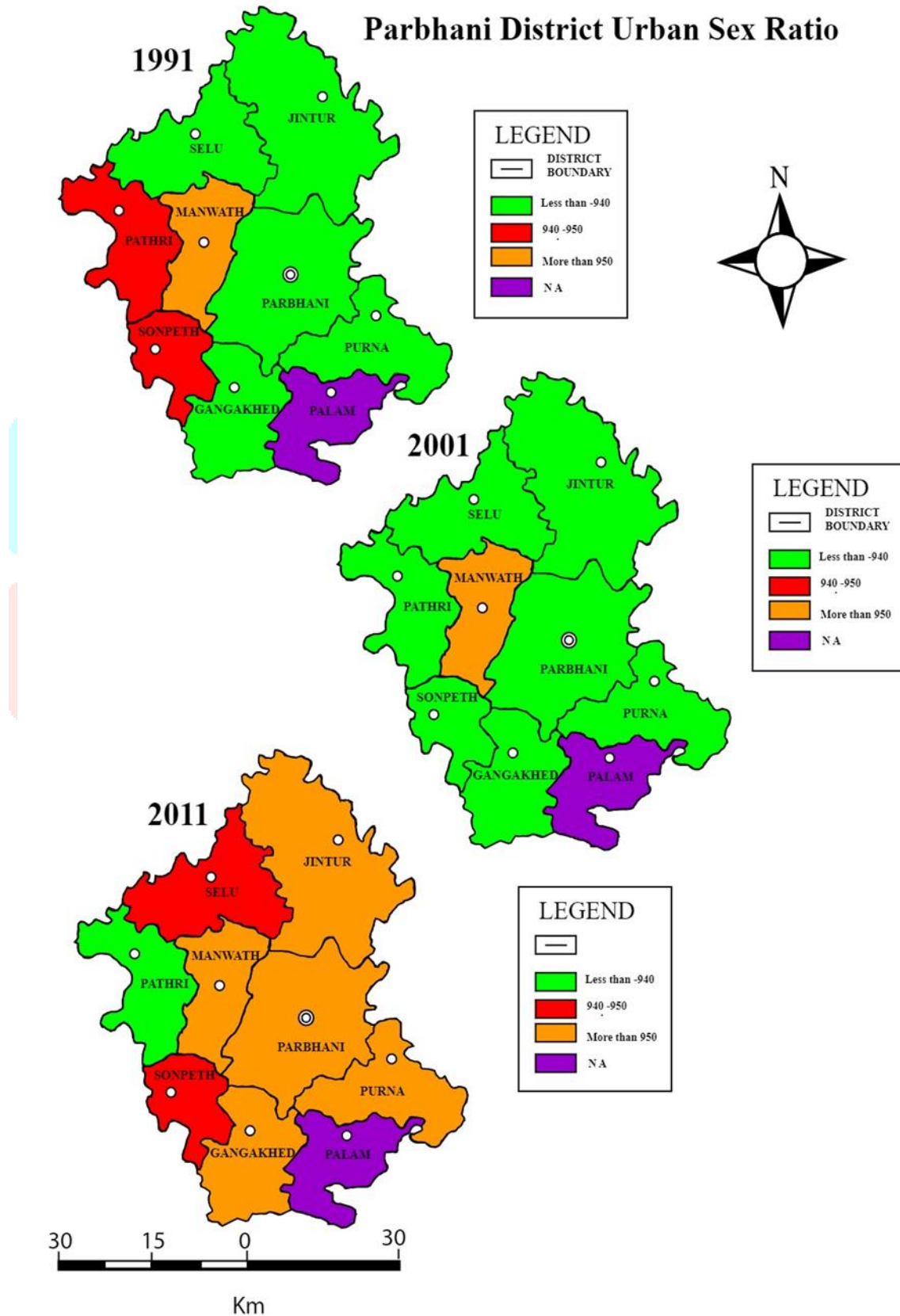


Fig. 3.5: Illustrations the Decadal Dissimilarity in Overall Sex ratio in Parbhani District

Table No. 3.4: Spatial Pattern of Urban Sex Ratio (1981-2011)

Source: Census of India, (2011)

Categories	Town or City			
	1981	1991	2001	2011
High sex ratio (Above 947 Female / 1000 Males)	Selu, Jintur, Manwath, Pathri, Gangakhed.	Manwath	Gangakhed, Manwath	Jintur, Purna, Parbhani, Manwath, Gangakhed,
Moderate Sex ratio (900 - 947 female / 1000 Males)	Parbhani, Purna	Selu, Jintur, Pathri, Purna., Parbhani, Sonpeth, Gangakhed,	Purna, Pathri, Sonpeth, Parbhani, Jintur, Selu	Selu, Pathri, Sonpeth
Low sex ratio (below 900)	Nil	Nil	Nil	Nil

4. CONCLUSIONS

Few tehsils and town of the Parbhani district shows higher sex ratio then each other, it shows the different picture of few tehsils and towns of the district. We have selected 9 tehsil and 8 towns of the district to study the sex ratio of the area the data has been also compared with the Maharashtra and India. Number of per 1000 females is satisfactory in the Parbhani district. The district has the increased type of sex ratio in the last three decades. It shows gradual decrease in the first decade and there is the increasing trend in sex ratio other two decades. There is variation in the trends in the urban sex ratio of Parbhani district as compared to Maharashtra and India.

Urban sex ratio percentage of female population shows gradual decrease and increasing order in decadal period in the district. Town and city wise sex ratio shows change in the decreasing order in the first decade and increasing order has been observed in the second decade and in the third decade there is only one town showing the decreasing order of the sex ratio in the district that is Pathri town. The variation order of the sex ratio is due to the preference of the male child over the female child, poor family income, poor health facilities, and low status of woman in the society. To increases the sex ratio, we have to improve the status of woman and educate the people on the ground level thoroughly.

Declaration: The authors of this manuscript do not oppose the interest.

Acknowledgement:

We are thankful to the Mahatma Jyotiba Phule Research & Training Institute (MAHAJYOTI), for financial support to this research and the school of Earth Sciences, Swami Ramanand Teerth Marathwada University, Nanded, Maharashtra, India for providing laboratory and library facilities that are helping me to carry on with my work in an effective way.

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