

## "GEOGRAPHICAL STUDY OF SPATIO-TEMPORAL SEX RATIO IN NASHIK DISTRICT, MAHARASHTRA"

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### Abstract

*At national and local level sex ratio of population has been dominated by males. Proportion of females in total population influences status of females in the society and participation of females in the labour force. The regional variation in sex ratios and gender system has mutual influence on each other and is also affected by the geographical and economic scenario of the region. In urban part of India, sex ratio is very less, which creates many social problems in the region. Such condition is not favorable for overall development of the region. It is always harmful and creates disturbances in the process of socio-economic development. The study of sex composition is significant to the regional planners, sociologists and geographers for regional analysis and future planning of the society.*

*In this paper an attempt has been made to analyze the spatio-temporal pattern of sex ratio in Nashik District of Maharashtra from 1901 to 2011 and also highlights the rural-urban sex ratio of 2011 in the study region. Nashik District's population constituted 5.43 percent total Maharashtra's population. Present study is entirely based on secondary source of data. The actual growth rate of specific decade is obtained by dividing the difference between two decades. The average sex ratio of the Nashik District was recorded 931. But in urban region it was so lower (916) than rural area (942). Within the district the sex ratio varies in both rural and urban areas. In rural area it was highest in Surgana (999) taluk whereas it was only 899 in Nashik taluk of the study region.*

*Keywords: Sex Ratio, foeticide, health and sex determination tests.*

### Introduction:

Sex ratio is an important social indicator, which defined the number of females per thousand males. Sex ratio has great importance in the study of population because it is closely related to socio-economic condition of area (Jodkari & Barakade, 2012). At national and local level sex ratio has been dominated by males. Proportion of females in total population influences status of females in the society and participation of females in the labour force (Sawant & Athavale, 1994). In India, gender

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injustice starts from abortion of females foetus resulting in decline in sex ratio (Chirag Bhashinya, 2012). Attitude of preference of male child and neglecting female child creates imbalance in sex ratio. The study of sex composition is significant to the regional planners, sociologist and geographer for regional analysis and future planning of the society. The regional variation in sex ratios and gender system have mutual influence on each other and also affected by the geographical and economic scenario of the region (Rakesh Sharma, 2012). In urban part of India, sex ratio is very less, which creates the many social problems in the region. Such condition is not favorable for overall development of the region. It is always harmful and creates disturbances to the socio-economic development process. So there must be balance in sex ratio in any region.

## 2) Objectives:

The main objectives of the present paper are as follows.

- i. To analyze the spatio-temporal pattern of sex ratio in the study region.
- ii. To highlight the rural-urban sex ratio of 2011 in the study region.
- iii. To find out the reasons of declining sex ration and to suggest some complementary suggestions for increasing the sex ratio in the study region.

## 3) Study Area:

Nashik District is situated partly in the Tapi basin and partly upper Godavari basin. It lies between 19° 33' to 20° 53' north latitude and 73° 15' to 75° 16' east Longitude (Nashik Gazetteer, 1983). Nashik is one of the major agriculturally and industrially developed districts in the North Maharashtra. Nashik District has an area of 15,530 Sq.km. In 2011, Nashik District had population of 6109052 of which male and female were 3164261 and 2944791 respectively. Nashik District population constituted 5.43 percent total Maharashtra population. Location of the study area is showed in Fig. No.1. there are 15 tahsils included in the Nashik District.

The district is a part of Deccan plateau of the Peninsular India and formed by basaltic rocks. Physiographically, district is divided into three divisions viz. the hilly, Godavari basin and Gima basin. The elevation of the study area is varying between 300 M to 600 M from the sea level with lofty peaks. The district has two main rivers the Gima and the Godavari. The district is surrounded by Dhule district in the north, Jalgaon and Aurangabad districts in the east, Ahmednager district in the south, and Thane district in the south-west and Gujarat

Fig. No.1



state in the north-west. Rice, Sugarcane, Onions, Grapes, Jowar, Bajra and Vegetables are the dominant crops of this region. The climate of the district is generally dry except during the monsoon season. The average annual rainfall of the district as a whole is 1034.5mm. The rainfall in generally decreases from west to east.

#### 4) Data and Methodology:

Present study is entirely based on secondary source of data. Secondary data is obtained from socio-economic abstract of the Nashik district (1995-96 and 2012), District census handbook, Economic survey of Maharashtra (2012-13) & Nashik District Gazetteers. The taluk has been taken as a unit for spatial-temporal analysis of sex ratio in the study region. Statistical tools like percentage, average etc. have been used in the study. Data is processed and represented with the bar graph and choropleth map by using GIS techniques.

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The actual growth rate of specific decade is obtained by dividing the difference between two decades. In term of females per thousand males. Sex ratio is calculated by using following formula.

$$\text{Sex Ratio} = \frac{P_f}{P_m} \times 1000$$

Where,

$P_f$  = Total Female Population

$P_m$  = Total Male Population

By using the above formula sex ratio is calculated for each taluk of the study region.

#### 5) Results and Discussion:

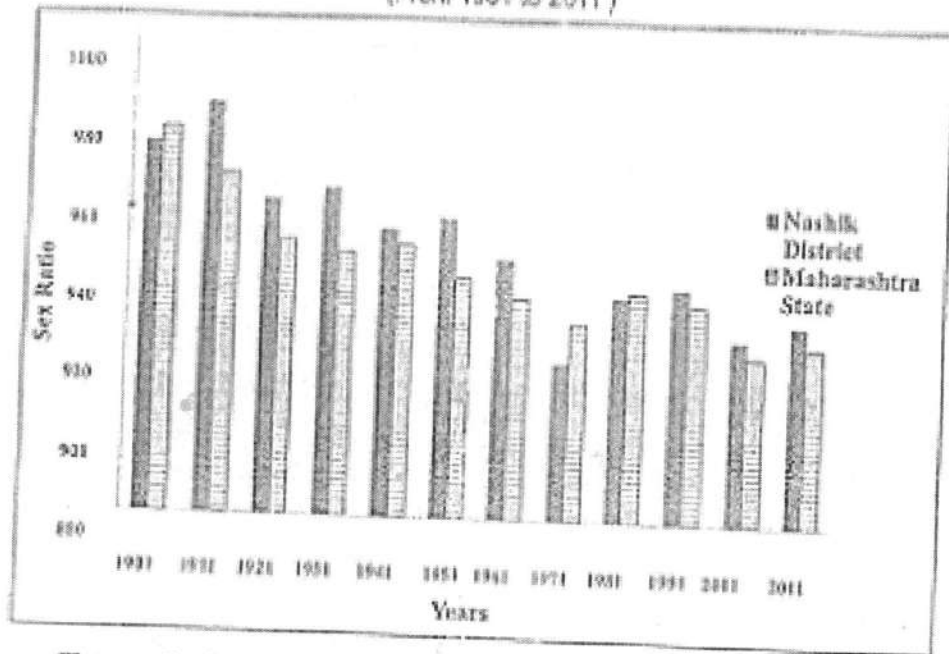
##### Temporal variation in Sex Ratio:

Table No.1 and Graph No.1 indicates the trends of sex ratio in Nashik District and Maharashtra State from 1901 to 2011. In Nashik District sex ratio declined from 984 in 1911 to 931 in 2011. The overall sex ratio in the study region also shows a continuous negative trend, except few up and downs, bearing a marginal improvement in 1991 and 2011. There is a slight improvement in the proportion of females to 931. In Maharashtra, in 1901 the sex ratio was 978 females per 1000 males. But it had reached upto the lowest point at 922 in 1991. But during the last decade, there is a slight increase in the sex ratio which was recorded 925 in 2011. It is shown in the Table No. 1 and Graph No.1.

Table No.2  
Nashik District : Rural and Urban Sex Ratio-2011  
(Females per thousand males)

Sr. No	Taluk	Urban	Rural	Sr. No	Taluk	Urban	Rural
1	Surgana	864	999	8	Dindori	600	952
2	Kalwan	600	963	9	Peth	600	985
3	Deola	600	914	10	Trambak	913	981
4	Satana	939	936	11	Nashik	870	899
5	Malegaon	958	944	12	Igatpuri	930	962
6	Nandgaon	952	931	13	Sinner	925	919
7	Chandwad	600	930	14	Nighad	898	931
8	Dindori	600	952	15	Yeola	* 929	932
9	Peth	600	985		Average	916	942

Graph No.1  
Sex Ratio in Nashik District and Maharashtra State  
(From 1901 to 2011)



The sex ratio of study region was recorded in 931 (2011), which was more than state (925) but less than National average (940). In the study region negative decadal change was observed during the 1971 and it was -26, whereas positive decade change in sex ratio was recorded in 1981 and it was +17. In Maharashtra State such fluctuations were observed maximum in 1921 and it was -16, otherwise it was ranging between 3 to 8.

**Spatial Pattern of Rural-Urban Sex Ratio-2011:**

Table No. 2 indicates the spatial pattern of rural urban sex ratio of the study region during the year 2011. The average sex ratio of the Nashik District was recorded 931. But in urban region it was lower (916) than rural area (942). The reasons for the difference between the urban and rural sex ratio, mainly migration of males from rural areas of the study as well as from the other districts and states. Satpur, Ambad, Malegaon, Sinnar and Igatpuri are the major urban centers where some employment opportunities are available. Except Sinnar, in all urban areas sex ratio is less than their areas of rural tahsils. It is shown in the Table No. 2.

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**Table No.2.**  
Nashik District: Rural and Urban Sex Ratio-2011  
(Females per thousand males)

Sr. No.	Tahsil	Urban	Rural	Sr. No.	Tahsil	Urban	Rural
1	Surgana	864	939	8	Dindori	939	952
2	Kalwan	900	961	9	Peth	900	985
3	Deola	900	914	10	Trambak	913	981
4	Satana	939	935	11	Nashik	870	899
5	Malegaon	958	944	12	Igatpuri	910	962
6	Nandgaon	952	931	13	Sinnar	925	919
7	Chandwad	900	930	14	Niphad	898	931
8	Dindori	900	952	15	Yeola	929	932
9	Peth	900	985		Average	916	942

(Source: Nashik District Statistical Abstracts 1995-96 & 2012)

Within district, the sex ratio varies in both rural and urban areas. In rural area it was observed maximum in Surgana (939) tahsil whereas it was only 899 in Nashik tahsil of the study region. The difference between rural and urban areas of Satana and Yeola tahsils was observed very low (3) but in Surgana tahsil it was recorded very high (135).

On the basis of sex ratio, tahsils of the study region are divided in to three categories. They are shown in the Table No.3 and Fig.No.2 and 3.

**Table No.3**  
Sex Ratio of Nashik District-2011  
(Females per thousand males)

Sr. No.	Magnitude	Urban Area Tahsil	Rural Area Tahsil
1	Low (Below 930)	Surgana, Trambak, Nashik, Igatpuri, Sinnar, Niphad & Yeola	Deola, Chandwad, Nashik & Sinnar
2	Medium (931-950)	Satana	Satana, Malegaon, Nandgaon, Niphad & Yeola
3	High (Above 951)	Malegaon & Nandgaon	Surgana, Kalwan, Dindori, Peth, Trambak & Igatpuri

Source: Compiled by Researchers, 2013.

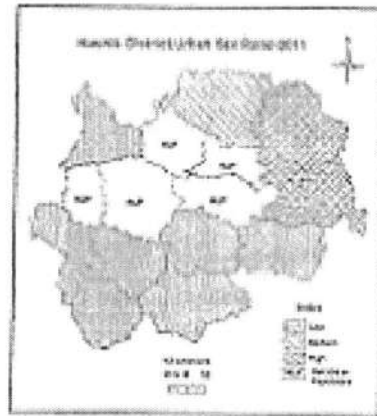


Fig. No. 1



Fig. No. 2

**Low Sex Ratio (Below 930):**

Tahsils having sex ratio below 930 are included in this category. In urban areas of Surgana, Trambak, Nashik, Igatpuri, Sinnar, Niphad & Yeola are included in this category. In rural areas of Deoda, Chandwad, Nashik & also Sinnar are included in this first category, which are shown in the Fig.No.2 & 3. Low sex ratio creates many social problems in such region. The major reasons of low sex ratio in these regions are migration of males population from rural areas, male dominating culture, the combine effects of sex selection, abortions of females foetus etc.

**Medium Sex Ratio (931 to 950):**

In this category, tahsils having sex ratio between 931 to 950 females per thousand are included. The urban area of Satana tahsils and rural areas of Malegaon, Nandgaon, Niphad, Satana & Yeola are included where agriculture activity is dominated.

**High Sex Ratio (Above 951):**

Tahsils having sex ratio above 951 are included in this category, which are shown in Fig No 2 & 3. In this category urban areas of Malegaon and Nandgaon tahsils and rural areas of Surgana, Kalwan, Dindori, Peñ, Trambak and Igatpuri are included. Most part of these tahsils is tribal.

**7) Conclusions:**

1. In Nashik District, sex ratio is declined from 984 in 1911 to 931 in 2011. The overall sex ratio in the study region also shows continuous negative trend, except few up and downs, bearing a marginal improvement in 1991 and 2011.

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2. The level of sex ratio is not uniform in the study region. In urban (915) area it is less than rural (942) areas of the study region.
3. In 2011, maximum sex ratio was observed in rural area of Surgana (999), whereas a minimum sex ratio was recorded in urban part of Surgana (864) in the study region.
4. The major reasons for low sex ratio in these regions are migration of male population from rural areas, male dominating culture, the combine effects of sex selective test, abortions of females foetus etc.
5. Imbalance in the sex ratio leads to decline the status of women and increase violence against women.

#### **6) Recommendations:**

In order to save the country from negative impact of declining sex ratio, all segments of Indian society, all political parties together shall have to find solution to this problem, only then the Indian society could be saved from serious adverse effects of sex ratio such thought was expressed by R.C. Chandra (2008). This is again need to urgent implement in India in real condition.

It is essential to create strong rules and regulations against sex determination tests and female foeticide. To create the awareness in society, the programmes should be telecasted like *Suryawar Jayate*, *Sapat Parivar Mahachorcha* etc. Rajasthan state has started some strong efforts to control this female foeticide. Seminar's and conferences should be arranged for the college students as well as school students. Attitude of parents and change in mentality is very challengeable, but the awareness programmes should be actively arranged for the women's mandals, self help groups, college students etc.

In Maharashtra, Government also carried out some raids against private clinics in Beed, Aurangabad and other districts, where sex determination testing and female foeticide are illegally carried out. Testing of gender should be banned. But such steps and campaign must be on regularly. It is well proved that basic education and health are important factors which can helps to increase the sex ratio. Kerala State had done well in this regards so there is need to develop such facilities in region where sex ratio is very low. Lastly implementation of laws should be strictly followed which will be helpful to balance the female and male population.



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