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## **Spatio Temporal Analysis of Sex Ratio and its Impact on Socio – Economic Condition in Mysore city of India**

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### **Abstract**

The sex composition of Population in terms of ratio sex ratio is an index of the socio–Economic Conditions prevailing in an area useful tool for regional analysis unquestionably the classification of population according to sex generally influences the form & tempo of life in any community. The balance between the two sexes is an important aspect of population structure. Economic and socio relationships are closely related to balance or disparity between numbers of males and females. This study is exclusively based on the secondary data collected from different sources and census reports of Mysore city. The main objective of this paper is to understand the ward wise distribution of sex ratio. Impact of distribution pattern on socio – Economic demographic and cultural factors of the region and sex ratio all helps in Geographical analysis in Mysore city.

**Key words:** Sex ratio socio –Economic region secondary data, census Demographic Cultural, Geographical.

### **Introduction**

It is common practice to express the sex composition of population in terms of ratio "sex ratio is an index of the socio-economic conditions prevailing in an area & is a useful tool for regional analysis". Sex ratio is fundamental to the geographic analysis of an area, they are not only important features of landscape but also influence the other demographic elements significantly and as such provide additional means and materials for analysis regional landscape. Unquestionably the classification of population according to sex generally influences the form & tempo of life in any community. The balance between the two sexes is an important aspect of population structure. The proportions of men and women in total population of a society have vital bearings in so far as it affects the labor supply through marriage and fecundity.

### **Objectives**

The main objectives of the study are

- To analyze the demographic background of the study area.
- To find out the growth trends of sex ratio during the period of 50 years from 1951 to 2011.
- To examine the sex ratio of different ages in Mysore city from 1971 and 2011.
- To analyze the ward wise spatial distribution of sex ratio in Mysore city of 2011.

### **Methodology**

The proposed study is mainly concentrates on the analysis of the sex ratio in Mysore city from both spatial and temporal perspective. The study is mainly based on secondary data. The data was collected by the different sources like MUDA, Corporation office, books, journals, census report, administrative reports & statistical hand books Etc. The secondary data was used to show the patterns of sex ratio and trends of sex ratio of Mysore city in different time period. The data was analysed by using choropleth techniques. This would give an insight into the spatial variation of the sex ratio in the Mysore city. The simple statistical tools were used for this study. The sex ratio of the young population is computed by taking 0-14

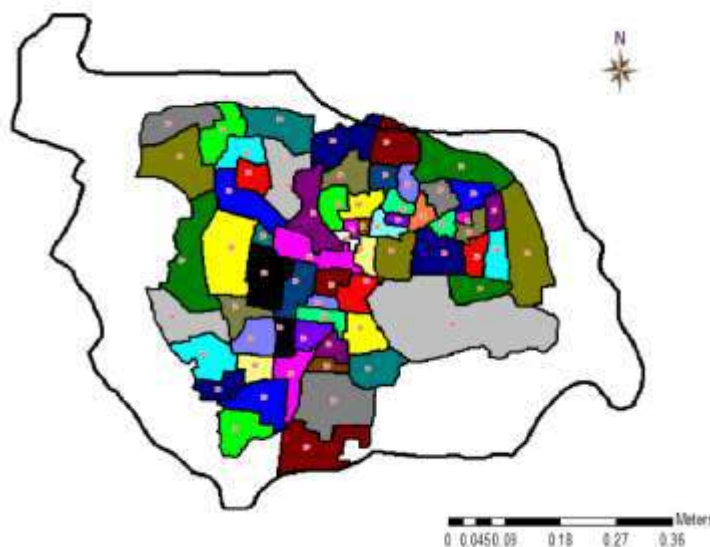
age population of the both sexes. Similarly adult sex ratio (15-59 age group) and old age sex ratio (more than 60 ages) are computed and analyzed

### STUDY AREA (MYSORE CITY)

Mysore is a city in the Indian state of Karnataka and the administrative seat of Mysore district, which is one of the fourth largest districts in Karnataka. Mysore was the former capital of the kingdom of Mysore. It is an education, commercial & administrative centre and also an important tourist and heritage centre in Karnataka. Mysore city is also well known for the cultural capital of the state was the home of many great musicians, music composers, dancers and Sanskrit scholars, mysore university, CFTRI, many other academic 7 scientific institution are situated here. Mysore city is situated amidst beautiful surroundings with the majestic chamundi hills with the altitude of 1085 meters above the mean sea level acting as a backdrop the city complex. A third of the city on the northern side is drainage towards he river cauvery and the southern part of the city is drained by the river kabini. Mysore lays on a spur extension of the coorg highlands, around which river cauvery seven one of its tributaries, the kabini skirt. The city acts as water divide for many small rivulets, which join the two rivers. The city proper has uneven topography with elevated ridges on the east and west there is thus a great natural divergence in the gradient within the city.



Location of Mysore City:



### Demographic characteristics:

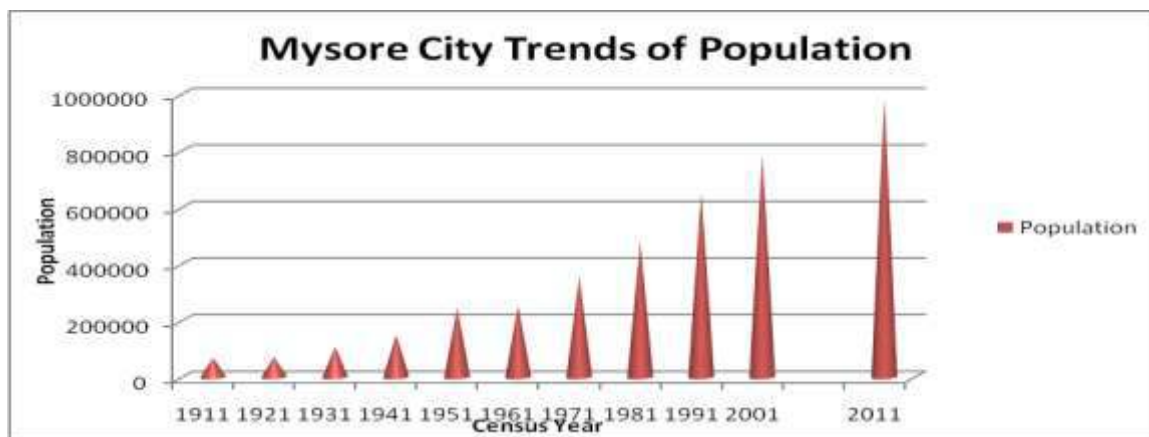
The population of the city was 6,53,345 according to 1991 census. The city is the second largest city in the states of Karnataka. It is now estimated, based on 1991 census, with the introduction of several major industries like bharaatha earth movers, kirloskar, security pres, and conversion of Bangalore Mysore railway line from meter gauge and the proposed express way between Bangalore Mysore the population as a result it reached 9.83 lakhs in 2011. The growth of population of Mysore as recorded during the last few decades are noted below.

The gender ratio of the city is 967 females to every 1000 males and the population density is 6223 persons per km<sup>2</sup>. Among the population 76.76% are Hindus 19% are Muslim's 2.84 are Christians and the remaining belongs to other religions. There are only 33.3% of the population in mysore city belong to the working class, which is lower then the working population of urban areas of Karnataka about 35.7%.The literacy rate of mysore city is 75.5% which is much higher than the states average of 67%, and 19% of populations in mysore like below the poverty line a 78.95% of the population speaks kannada while other languages such as English, Tulu, , Tamil and Hindi are also spoken. According to the census, which we find that, there has been increasing trend from 1911 to 2001. The population of the city was 68,111 in 1971 and it crossed to 1 lakh in the year of 1931 and it doubled in the year of 1951 (2,44327).

**Table no 1: Mysore city trends of population**

Census Years	Population
1911	68111
1921	71306
1931	107142
1941	150542
1951	244327
1961	253865
1971	355685
1981	479081
1991	653345
2001	787179
2011	1007226

Source: Mysore City Corporation



### The Trend of sex ratio in Mysore city:

Sex composition may be studied with reference to the sex ratio which may be recorded in two different ways: The number of females per 1000 males or vice versa and

Males or females as a percentage of the total population.

In Mysore, from the point of view of sex ratio, population depicts the characteristics of masculine population, i.e. the number of males is greater than the number of females. The following table reveals the sex composition of the Mysore city population.

**Table 2: The trend of sex ratio in Mysore city (1951-2011)**

Year	Total male population	Total female population	Female per 1000 male
1951	125459	118864	947
1961	133365	120320	902
1971	186364	149321	801
1981	247323	231758	937
1991	336244	317101	943
2001	400109	387070	967
2011	505607	501619	992



According to the 1951 census, in Mysore city the male & female population was 1.25 and 1.18 lakhs respectively. Males and females were 4.0 & 3.87 in 2011. Thus the sex ratio was 947 females per 1000 males in 1951, and the figures during 2011 remind increased i.e. 992 females for 1000 males in the city.

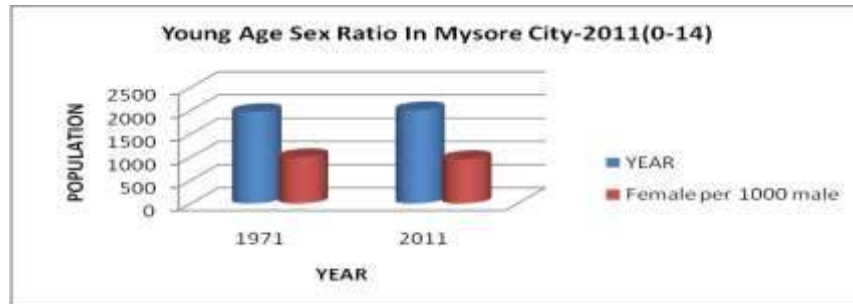
### The Trend of age specific sex ratio in Mysore city in [1971-2011]

The trend of sex ratio is differing from age in to different ages. The young [0-14], adult [15-59], old [60+] ages have different sex ratio in different time period.

The age specific sex ratio for last two decades in 1971 and 2011 is studied. This fluctuation depends upon the economic, social (literacy) and industrial development of the city.

**Table no 3: The young age (0-14) sex ratio in Mysore city-2011**

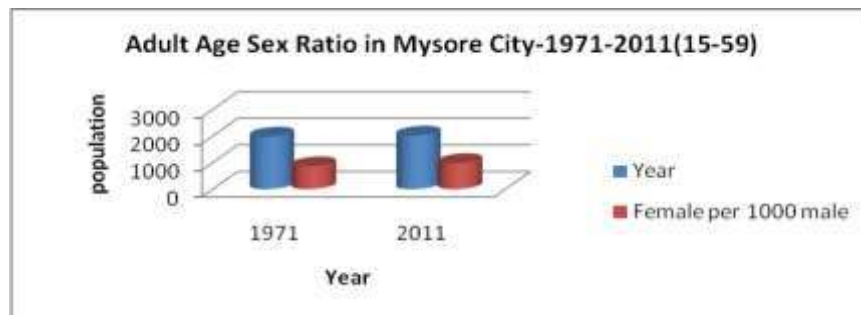
Year	Male	Female	Female per 1000 male
1971	67154	67003	997
2011	48958	46869	957



**Table no 4: The adult age (15-59) sex ratio in Mysore city-2011**

YEAR	MALE	FEMALE	FEMALE PER 1000 MALE
1971	109007	93145	854
2011	250854	245698	979

Graph no: The adult age sex ratio in Mysore city



**Table no 5 : The old age (60and above age) sex ratio in Mysore city-2011**

YEAR	MALE	FEMALE	FEMALE PER 1000 MALE
1971	10203	9173	899
2011	30158	30968	1026



In the above table shows that in the young age sex ratio was declining from 1971 to 2011. It was 997 in 1971 and it was declined to 961. It shows that the female young population is declining at younger ages. An important change that has taken place in adult age group that the sex ratio was highly increased from 1971 to 2001. In the year of 1971, the sex ratio was 854 and it increased to 967 in 2011. Another major change that has taken place in old age sex ratio between 1971-2011 is that, which had lowest sex ratio in 1971 (899), has totally under gone a transformation showing relatively very high sex ratio in 2011 (1026). It shows that, the every 1000 males have more than 1000 females. It revealed that, the female population was predominant at older age group. And male was prominent at the younger and adult age groups.

### THE WARD WISE SPATIAL DISRIBUTION OF SEX RATIO (MYSORE CITY)

The sex ratio is an important tool for the regional analysis. The sex ratio is differing from region to region depending upon several factors, such as social, economics, political, science and technology etc. Which have brought about the changes in birth and death rate, migration, standard of living and socio-economic status of the people these leads to tremendous variation of sex ration in different regions. Therefore the ratio indicates the development of their region. The Mysore city sex ratios have been calculated which have thrown light on the nature of distribution. In order to understand the pattern of sex ratio wards with positive and negative pattern are analyzed by suitable cartographic presentation.

The lowest sex ratio range of below 850 prevailed around the areas like Manasagangothri, Jayalaxmipuram in 2011. Scenario under 951-1000 is a healthy range under prevailing sex ratios in the city and in a way, this as come as face saving scenario for Mysore, because more than 50% of they areas were under this range. This indicates the favorable health and socio-economic conditions for the female population in the city. Important areas in the city under this range are: Agrahara, chamundipuram, Fort mohalla, Gundurao nagara, Vidyaranyapuram, Kuvempunagar, Saraswathipuram, VV puram, Bannimantap extn, udaygiri, shanthinagara, Siddharthanagara, Kalyanagiri , Tilak nagara and so on.

The medium sex ratio in the cities which ranging from between 850-950, the important wards under this range are, JP Nagara, Chamarajpuram, Devarajamohalla, Yadavagiri, MG koppal, Metagalli, Bannimantap, Nazarbad, and Kurabralli. The higher sex ratio cities which have above 1000 females per thousand males. This is a healthy sign of desired growth of he sex ratio; the range of 1001-1050. The cities come under this category are: Laxmipuram, Vidhyaranyapuram, Vishweshwara nagara, Ashokapuram (KR vana), Devarajamohalla (Jal), Kumbaragiri, Kamatagiri, Bamboo bazar, Vontikoppal, Kylashapuram, Mandimohalla, Veeranagare, Gandhinagara, Ganeshanagara, Kythmaranalli, and Ghosia nagara etc.

**Table no 6: Ward wise sex ratio in Mysore city (2011)**

Sex ratio	No of wards	%
>850	2	3.1
851-950	12	18.5
951-1000	34	52.3
<1000	17	26.1
Total	65	100

The table indicate that the sex ratio have distributed unequally through the city. Because of the male migration and there cultural and socio-economic status were improved in that area. Here we can find that good in female status and economic status. But some of the areas are still backward in there position socio-economic status of the females and some are in middle stages. The sex ratio in Mysore city also various from one ward to another. Out of 65 wards of the city, 4 wards

have the lowest sex ratio of below 850 while 17 wards have the highest sex ratio over 1000 females per 1000 males, of the remaining 34 wards are found in 950-1000 range, 12 in 850-950 range. Thus there is wide variation in the sex ratio from one part of the ward of another.

**Less than 850(Lower sex ratio):** In the ward wise sex ratio of Mysore city, the two areas come under this negative stage which having very less female population namely, Manasagangothri and Jayalaxmipuram. It is in the lower stage of female sex ratio in Mysore city. **850-950(medium sex ratio):** In this stage we find- some of the improvements of the areas, which is having medium population of female sex ratio in Mysore city. Some of the areas are: JP Nagar, Chamarajpuram, Devarajmohalla, Yadavagiri, MG koppal, Kumbarkoppal, Metigalli, and Bannimantap etc. **951-1000(Healthy sex ratio):** This stage is known as healthy stage because; in these areas the female status is good. And also good socio-economic statuses were improved in this area. This is healthy stage for the development of city of Mysore. Some of the areas namely Agrahara, Chamundipuram, Fort mohalla, Gunduroanagara, Datagalli and Saraswathipuram etc.

**Above 1000(Higher sex ratio):** Here we can find good economic status good administrations have also built through political system. Here we find much prominence to the female education and there welfare. It is a very good stage for the development of Mysore city. Areas under this position mainly, Laxmipuram, Vidyaryanyapuram, Vishweshwaranagara, Ashokapuram, Kumbargiri, Nazarbad, Kamatagiri and Ganeshnagara so on. Here we can find that, per which have above 1000 females per 1000 males.

**Table no 7: Ward wise male population in Mysore city-2011**

male population	No of wards	%
>5000	35	53.8
5000-10,000	24	36.9
<10,000	6	9.3
Total	65	100

In the above table indicate the population ratio of male have distributed unequally through the city. The distribution of the male population ratio in a Mysore city. **Less than 850(Lower male population ratio):** In the distribution of ward wise male population of the Mysore city, the 35 areas were come under this stage. This has very less male population in a Mysore city. Some of the wards like, Agrahara, Sunnadkeri, Laxmipuram, Chamundipuram, Hosa bandikere, Fort mohalla, Yidhyaranyspuram, and Vishweshwara nagara.

**5000-10,000(Medium male population ratio):** In this stage we find improvements of the male population ratio which is having medium growth of male population of Mysore city. In this group 24 areas have been taking place in this medium male population level. Some of the wards are Gundu rao nagara, JP Nagara, Ashokapuram, Jayanagara, Kuvempunagar, Thonachikoppal, Manasa ganagothri; Lashker mahalla, Yadhavagiri, Paduvaralli, and Kumbarkoppal So on.

**Greater than 10,000(Higher male population):** Here we can find the high growth of male population. They are namely, Srirampuram, Dattagalli, MG,koppal,Shanthinagara, Kyathmarnalli, Gayathripuram, and Kalyangirinagara.

**Table no 8: Ward wise female population in Mysore city-2011**

Female population	No of wards	%
>5000	33	50.7
5000-10,000	26	40
10,000	6	9.3
Total	65	100

In the above table indicate the population ratio of female have distributed unequally through the city. The distribution of the female population ratio in a Mysore city.

Less than 850(Lower female population ratio): In the distribution of ward wise female population of the Mysore city, the 33 areas were come under this stage. This has very less male population in a Mysore city. Some of the wards like, Hosa bandikere, Fort mohalla, Vidhyaranyspuram, and Vishweshwara nagara, Kamatagiri, Bamboo bazaar and Yadavagiri etc.

5000-10,000(Medium female population ratio): In this stage we find improvements of the female population ratio which is having medium growth of male population of Mysore city. In this group 24 areas have been taking place in this medium male population level. Some of the wards are, Thonachikoppal, Manasa ganagothri, Lashker mahalla, Yadhavagiri, Paduvaralli, and Kumbarkoppal, Jayalaxmipuram, W puram, Vontikoppal, Metagalli, and Kalyanpuram. Etc.

### Summary and Conclusion

Sex ratio refers to the ratio between men and women living in a region. In geography it is very important to know the regional wise distribution of both male and female population as it helps to know about regional development. The study reveals the trend is not same, it differs from one year to another the study of sex ratio is very important because,

- It reveals about the distribution pattern with proportion to ratio.
- Variation according to ward wise can be studied.
- Impact of distribution pattern on socio-economic, demographic and cultural factors of The region.
- Sex ratio reflects on the development of the region.
- Sex ratio also helps in geographical analysis.

It is very essential to know about the distribution of sex ratio in the region. It reflects on the development factors including population distribution, Income, Occupation and other socio-cultural factors. The study also reveals about the ward wise distribution of sex ratio which impact on political factors too. It is important to know about spatial analysis of the region. All these factors have brought changes in birth and death rate, migration, standard of living and other status of the people which has brought tremendous changes in the demographic as well as regional variations. Therefore, it is very essential to study about the regional wise which reflects through distribution sex ratio of the Mysore city.

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