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STUDY OF SEX RATIO OF KARNATAKA STATE FROM LAST 5 DECADES

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ABSTRACT

Abstract: This paper investigates the shifting trends and spatial patterns of the sex ratio among the districts of Karnataka state, India, encompassing both rural and urban areas. The sex ratio, a crucial indicator of population composition and women's status in society, serves as a key index for assessing regional development. The study reveals the impact of underlying socio - economic and cultural factors on the sex ratio, which has been consistently declining in the country. The research highlights the disparities in sex ratio not only at the overall level but also in rural and urban sectors. Understanding this disparity is essential to comprehend employment, consumption patterns, and social needs within communities. The study discloses an imbalanced sex ratio in Karnataka, with a continuous decline from 1901 to 2011, except for marginal improvements, leading to significant shortages of females in both urban and rural areas.

Keywords: *Sex Ratio, Rural and Urban Sector, Variations, Literacy, RegionsandSpatio – Temporal*

INTRODUCTION

Sex ratio of the human population is one of the basic demographic characteristics, which is extremely vital for any meaningful demographic analysis. Changes in sex ratio largely reflects the underlying socio - economic and cultural patterns of a society in different ways. Sex ratio defined here as the number of females per 1000 males in the population, is an important social indicator to measure the extent of prevailing equity between males and females in a society at a given point of time. It is mainly the outcome of the interplay of sex differentials in mortality, sex selective migration, sex ratio at birth and at times the sex differential in population. The sex ratio is an index of the economy prevailing in an area and is a useful tool for regional analysis (Franklin, 1956). So, a proper understanding of the sex composition of any population is essential.

The precise term sex may be described as an anatomical and psychological characteristic that symbolizes biological 'maleness' and 'femaleness. In geographical studies, the sex composition is expressed in terms of a ratio between the numerical strength of males and females in the total population. The possible balance in the number of men and women is an ideal condition for the population. Interestingly, even in nature, differences in male and female population size are not an issue of worry, but when these differences convert into inequality owing to the relevance of socially and ethnically assembled surroundings and chronological conditions, then it becomes a matter of great concern for every discipline. This drastic dissimilarity in both sexes leads to adverse demographic and social impacts (NIPCCD, 2008). As the two sexes play partly contrasting and corresponding roles in economy and society, the study of sex composition presumes additional importance for population geographers. Despite being one of the leading economies in the world, India is still

burdened with a dilapidated sex ratio in both the child and adult p populations. he UN organisation, in its report titled 'Sex Ratios and Gender Biased Sex Selection:

History, Debates, and Future Directions, has also noticed this crisis and warned that there is a need for pressing deeds to assuage the moribund sex ratio, which has already reached emergency proportions. In India, with growing prosperity, the tendency to have small families, mainly in urban areas, is continuously increasing in the new emerging society.

The preference of a smaller number of children, especially males, as a security of their old, educated parents is more associated with determining the antenatal sexual category. It has been observed that new medical technology is widely used for illegal abortion rather than to assess the health status of the foetus, which supports the fact that sometimes the advancement of any technology can be a double - edged sword. Surprisingly but truly, the 2011 census of India found that there are many shocking incidences of atrocious killings (by poisoning, drawing, dumping in garbage, or starvation) of female children after birth with the active participation of female family members in some rural areas of the country. At the household level, certain domestic norms primed by society lead to giving healthier care to sons than daughters. This fact of giving a petite worth to girls adds to under nutrition and the unintentional results of excess female mortality and morbidity. So, it is requisite to mitigate this disquieting deficiency of females because no nation, society, or commune can assert to be part of the civilised world and affirm cranium height while condoning the practice of prejudice against one significant half of the community.

The sex ratio is one of the important attributes of population composition. It is the best indicator of the status of women in society and an index to study the level of development in a region. It has recorded a continuous decline in the country. The declining sex ratio has already become a serious social problem and a rude shock to the demographers. The present study is coupled with the state of Karnataka, which is recognised not only for its economic development but also for being far behind in sexual characteristics. The main motive of this paper is to analyse the spatio – temporal analyses in sex ratio in Karnataka and its rural - urban dimensions.

There is no doubt that the state having the satisfactory sex ratio compare with national average. As far as the sex ratio of rural and urban populations is concerned, it represents a contrastingly different pattern in comparison to western countries. Even our state, Karnataka, is showing more rural - urban differentials in the sex ratio. The study of this differential is essential for understanding the employment and consumption patterns, social needs, etc. of a community. Thus, the present study tries to analyse the in total, rural - urban differential in sex ratio in Karnataka state over space and time. It has been found that the sex ratio in the state is imbalanced and is continuously going to decline from 1901 to 2011 with slight variations, and both urban and rural areas are facing severe shortages of females over males. Hence, by analysing the sex ratio in districts of the state from the 1991 to 2011, our study intends to not only study the spatio - temporal analysis of the sex ratio but also its changes in rural and urban dimensions over the past three decades.

OBJECTIVES

1. To analyse the trends in sex ratio in Karnataka and Indiafrom 1901 to 2011.
2. To examine the spatial and temporal variations in sex ratio in Karnataka between rural and urban areas and to find out the causes behind those variations.

MATERIALS AND METHODS

This study is based on secondary sources of data. Mainly, the following documents are used to obtain the required data related to the selected variables, such as the data about decadal change of sex ratio from 1971 to 2011, total, rural, and urban sectors in light of growth and distribution of the population of Karnataka state from the decades 1991 to 2011, collected from Karnataka PCA 1991, 2001, and 2011, Indian Census Handbook 1991, Indian Census Report 2001, and Census of India 2011, PCA Data Highlights, Series 30, Karnataka State, and other related reports. Many books, articles, various websites, dissertations, and published and unpublished works from different sources have been used. The district has been considered the smallest unit of study. In 2011, the Karnataka state comprised 30 districts, but the information required for the present study was not available for the newly formed three districts, i. e., Ramanagar, Chikkaballapur, and Yadagir, in the 2001 census. Hence, the study has been used to restructure the 2001 population census data into 30 districts instead of the old classification of 27 Districts in Karnataka state. After collecting data, these were compared and analysed suitably by using simple statistical and cartographic techniques along with Microsoft Excel and STATA 12. The analysis and inferences were finally carried out in textual and tabular formats, followed by maps with descriptions of the study results.

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RESULTS AND DISCUSSIONS

Trends of Sex Ratio in Karnataka and India:

Table - 1 and Fig. - 1 depict the overall and rural - urban differentiation in sex ratio in Karnataka and India. In 1901, the census statistics put the figure at 972, 979, and 910 females and 1000 males in total in rural and urban areas, respectively, whereas in Karnataka, this numeral was 983, 984, and 976 females. The successive censuses also recorded a fall in the sex ratio, with an increasing difference in rural and urban areas. In 1951, the overall sex ratio of India was 946 females per 1000 males, with a great decline of 26 females in total as compared to 1901, whereas it was 965 and 860 in rural and urban areas in that order. At the same time, the state had registered 966 females per 1000 males overall, 974 females in rural areas, and 941 females in urban areas. In India, the female - male ratio was 935 in total, 952 in rural areas, and 880 per 1000 males in urban areas in 1981, while these figures were 963, 978, and 926 females in Karnataka state at the same time.

Table 1: Rural - Urban Sex Ratio in Karnataka and India, 2001 – 2011

Census Years	Karnataka				India			
	Total	Rural	Urban	Rural - Urban Differentials	Total	Rural	Urban	Rural - Urban Differentials
1901	983	984	976	8	972	979	910	69
1911	981	984	960	24	964	975	872	103
1921	969	975	936	39	955	970	846	124
1931	965	972	927	45	950	966	838	128
1941	960	965	935	30	945	965	831	134
1951	966	974	941	33	946	965	860	105
1961	959	973	913	60	941	963	845	118
1971	957	971	913	58	930	949	858	91
1981	963	978	926	52	935	952	880	72
1991	960	973	930	43	927	939	894	45
2001	965	977	942	35	933	946	900	46
2011	973	979	963	16	943	949	929	20

Source: Primary Census Abstract, Karnataka, 2011.

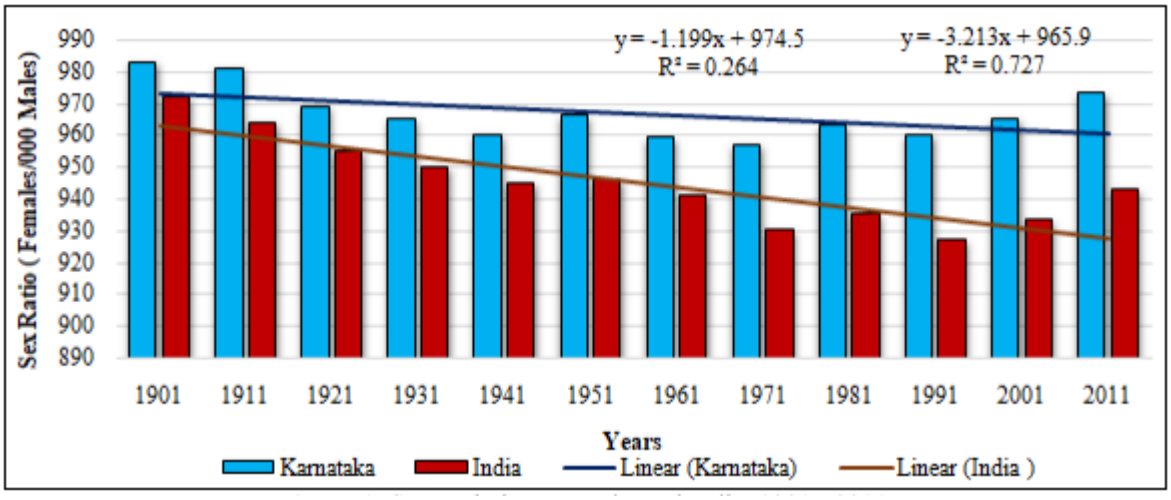

Figure 1: Sex Ratio in Karnataka and India; 1901 – 2011

The enumeration of the 2011 census revealed a minor improvement in the number of females per thousand males in all categories in India and Karnataka. It has been recorded that in 2011, the overall sex ratio of India was 943 females, compared to 933 females in 2001. The rural (949 females in 2011 from 946 females in 2001) and urban (929 females in 2011 from 900 females in 2001) sex ratios also increased, minimising the rural - urban difference of 26 females from 2001 (46 females) to 2011 (20 females). In 2011, there were recorded 973 females per 1000 males, compared to 965 in 2001 in total in the state. Rural and urban areas have also shown an upward trend in 2011 and 2001 and registered a number of 979 and 963 females per 1000 males, respectively.

Fig.2 clearly reflects that continuously, the sex ratio has remained against women from 1901 to 2011 in both countries and states, and a slight difference in the sex ratio in all groups prior to independence has been recognised with severe gender discrimination after independence. The high female mortality due to famine and outbreaks of epidemics such as plague and influenza has been attributed to the fall in the sex ratio in the decades of 1901 to 1921.

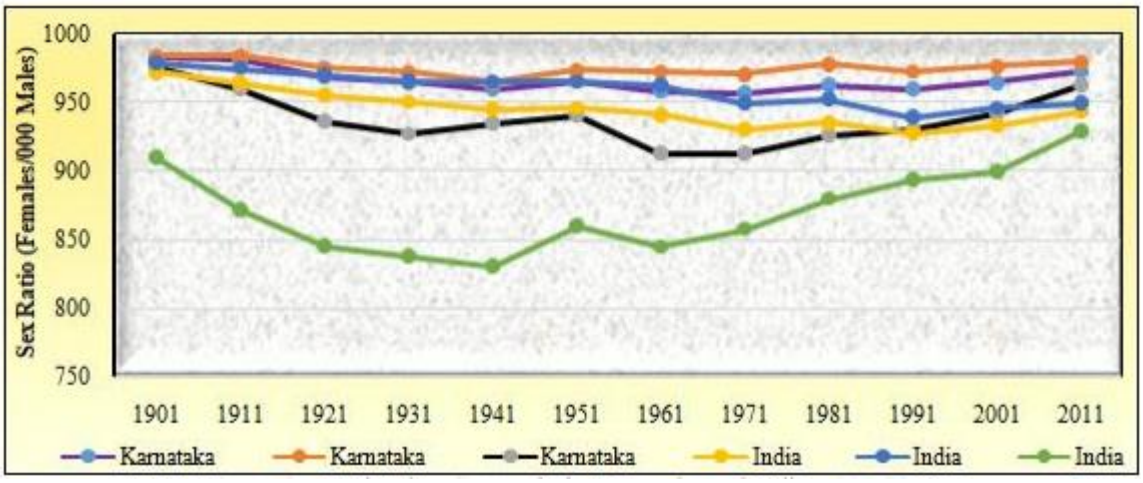

Figure 2: Rural-Urban Sex Ratio in Karnataka and India, 1901-2011

Further, the ignorance towards girl children and psychological and communal problems with women, which later lead to high mortality in adolescence and high maternal mortality, have been observed as major reasons behind the continuous failing sex ratio. The predetermination of sex and abortion following a prenatal diagnostic test is widely believed to be responsible contributors to this occurrence, and incidences of honour killing in some socially backward areas also support this. In the recent census, the availability of better medical facilities, living conditions, more attention to girls, and social change have contributed to some improvement in the sex ratio in the study area.

Spatio - Temporal Analysis of Sex Ratio in Karnataka:

The sex ratio in the country had always remained unfavourable to females. Moreover, barring some interruptions, it has shown a long term declining trend. The state not only has the lowest sex ratio in the country but has also observed an incessant fall in the number of females per thousand males. Table 2 depicts that there is a wide spatial disparity in total, rural, and urban sex ratios in the districts of Karnataka state. The state has witnessed marginal growth in the total and rural sex ratios and maximal growth in the urban sex ratio over the past decades. In continuation of the trend witnessed during the previous decades, the total sex ratio

of the state has improved from 960 (927) in 1991 to 973 (943); the rural sex ratio has improved from 973 (939) in 1991 to 979 (949); and the urban sex ratio has enhanced from 930 (894) in 1991 to 963 (929) in 2011, respectively. The increase in total sex ratio by 13 points and rural sex ratio by 6 points against the urban sex ratio increase of 33points has a substantially larger gap in rural - urban deferential sex ratio in Karnataka state. The district - wise profile displays that in 1991, the overall sex ratio was highest (1133) in Udupi district, against the state average of 960 females (14 Districts above the state average).

The highest ratio has been followed by Dakshina Kannada (1015), Hassan (999) and Bagalkot (982) districts, whereas the lowest proportion of sex ratio was recorded in Bangalore (903), Davanagere (933) and Dharwad (935) districts of the Karnataka state (Table 2). In rural areas, Udupi (1169) district again registered the highest sex ratio, followed by Dakshina Kannada (1024), Hassan (1012) and Raichur (989), whereas the lowest sex ratio is in Bangalore (906) followed by Haveri (934) and Dharwad (942) districts of the state. In urban districts, Udupi (1013) and Tumkur (893) have been listed as first and last districts of the state respectively.

The district - wise outline of the sex ratio shows that in 2001, the total sex ratio was again highest (1130) in Udupi district, against the state average of 965 (18 Districts above the state average) of the Karnataka state. The highest ratio has been followed by Dakshina Kannada (1022), Hassan (1004) and Kodagu (996) districts, whereas the lowest proportion of sex ratio was recorded again in Bangalore (908), Haveri (944) and Bangalore Rural (945) districts of the Karnataka state (Table 2). In rural sector, Udupi (1151) district again registered the highest sex ratio, followed by Dakshina Kannada (1033), Hassan (1013) and Kodagu (1003), whereas the lowest sex ratio is in Bangalore (913) followed by Haveri (942) and Dharwad (946) districts of the state. In urban sector, Udupi (1040) and Bangalore (907) have been listed as first and last districts of the state respectively. Some of the important reasons are; Neglect of the girl child resulting in their higher mortality at younger ages, High maternal mortality, Sex selective female abortions, Female infanticide and Change in sex ratio at birth.

Spatial Distribution of Sex Ratio in Karnataka; 2011:

Again, there are large variations in total, rural, and urban sex ratios in different districts of the Karnataka state. According to 2011 census figures, the state has 973 total sex ratios with a differential of 979 in rural and 963 in urban ratios; among the districts, it varies from 1094 in Udupi followed by Dakshina Kannada (1020), Hassan (1010), Chikkamagalur (1008) and Raichur (1000) districts to 916 in Bangalore district. Out of thirty districts, 20 districts have a high sex ratio, while 10 districts are below the state average. Disparities in sex ratio exist not only total but are displayed in rural as well as urban sex ratio also (Table 2). In rural sector, Udupi (1114) district again registered the highest sex ratio, followed by Kodagu (1022), Dakshina Kannada (1020), Hassan (1012) and Chikkamagalur (1008), whereas the lowest sex ratio is in Bangalore (877) followed by Bangalore (945), Haveri (946) and Dharwad (948) districts of the state. In urban sector, Udupi (1046) and Bangalore (920) have been listed as first and last districts of the state respectively. The graded distribution of sex ratio in Total, Rural and Urban Karnataka state as given in Table 2.

Table 2: Category wise Sex Ratio in Karnataka (2011)

Total Sex Ratio		Rural Sex Ratio		Urban Sex Ratio	
Ranges of Sex Ratio	No. of Districts	Ranges of Sex Ratio	No. of Districts	Ranges of Sex Ratio	No. of Districts
Very Low < 925	1 (3.33)	Very Low < 925	1 (3.33)	Very Low < 925	1 (3.33)
Low 926 - 950	2 (6.67)	Low 926 - 950	3 (10.00)	Low 926 - 950	2 (6.67)
Moderate 951 - 975	8 (26.67)	Moderate 951 - 975	9 (30.00)	Moderate 951 - 975	3 (10.00)
High 976 - 1000	14 (46.67)	High 976 - 1000	11 (36.67)	High 976 - 1000	15 (40.00)
Very High 1001 & above	5 (16.67)	Very High 1001 & above	6 (20.00)	Very High 1001 & above	9 (30.00)
Total	30		30		30

Sources: Based on Table - 3 and prepared by Author.

Out of thirty districts, only ten districts in the state have a higher total sex ratio than the state average, while the remaining twenty districts have a lower total sex ratio than the state average. These variations may be conveniently grouped into five grades to appreciate the spatial patterns in the total sex ratio in Karnataka state. The graded distribution of total sex ratio as given shows that only five districts (20.00 percent) of the state fall under the very high grade (1001 and above), covering the districts of Chikkamagalur in the south - western part of the state and forming a perfect compact region. These districts have very high sex ratios, which are more than 37 to 121 points above the state average (973).The reasons for this high sex ratio are the high level of literacy, no discrimination among male and female babies due to educational facilities in rural areas, and the fact that the rural population is more aware of the benefits of literacy. Fourteen districts (40.00 percent) of the state with a high sex ratio of 976 to 1000 form four separate regions in the eastern, southern, western, and extreme south - eastern parts of the state. The eastern region, which is relatively large, comprises the Gadag (982), Bellary (983), Koppal (986), Yadagir (989), Bagalkot (989), and Raichur (1000) districts of the state. The other five districts located in the southern part, namely Ramanagar (976), Tumkur (984), Mysore (985), Chamarajnagar (993), and Mandya (995) of the same grade, are compact in nature and form a definite region in the state.

CONCLUSION

The sex ratio in Karnataka State improved from 960 in 1991 to 973 in 2011. The change in sex ratio in individual districts, however, is not uniform, and there is significant regional variation. Female literacy has a positive bearing on the sex ratio, and states that have a higher literacy rate show faster movement towards gender parity. Therefore, the higher the female literacy rate in a state, the greater the improvement in the sex ratio for every percent increase in female literacy. The above discussion is precise with the results that, during different decades, the state has witnessed a satisfied with sex ratio but also the slightly declining rate. Though there was some augmenting in female proportion during the 2011 census, it does not mean that the current situation is less shocking because, in any category, not a single district of the state, has recorded sex ratio higher than the national average. Based on 2011, the state has 973 total sex ratio with a differential of 979 in rural and 963 in urban ratios; among the districts, it varies from 1094 in Udupi to 916 in Bangalore district. Out of thirty districts, 20 districts have a high sex ratio, while 10 districts are below the state average. Disparities in sex ratio exist not only total but are displayed in rural as well as urban sex ratio also. In rural sector, Udupi (1114) district again registered the highest sex ratio, whereas the lowest sex ratio is in Bangalore (877) districts of the state. In urban sector, Udupi (1046) and Bangalore (920) have been listed as first and last districts of the state respectively. The districts of the western and southern parts of the state, which are more developed in terms of many health and education indexes, have a superior sex ratio as compared to the northern and eastern districts, which are not only highly facilitating industrialization and urbanisation but also have a cluster of low literacy rates and are socially attentive.

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