

Gender Disparity in the Population of India: A Statistical View

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ABSTRACT The population of India at 0:00 hour of 1st March 2001, stood 1,027,015,247 comprising 531,277,078 males and 495,738,169 females. As widely believed and expected, India became the second country in the world after China to cross officially one billionth mark. Changes in sex composition largely reflect the underlying socio-economic and cultural pattern of a society in different ways. The sex ratio of Indian population has always been a topical interest for the demographers, social scientists, women's groups, research scholars and various planners and policy makers. This paper is an attempt to study the ratio percentage of female population in India over the male population. This study also focus on some related indicators and parameters because of which it reflects. It also pin-out the change in world sex ratio.

1. INTRODUCTION

India is the world's largest democratic country and was one of the first country to the grant women right-to-vote in 1928. The Indian Constitution is firmly grounded in the principles of liberty, fraternity, equality and justice. Its preamble promises all of its people social, economic and political justice as well as liberty of thought, expression, belief, faith and worship. It affirms equality before the law and prohibits discrimination on the ground of religion, race, caste, sex or place of birth. India is also a land where ancient sculpture reviewed women as living symbol of mother goddess. Yet unfortunately, these same traditions denied women on many basic rights, such as the right to perform the final rites of their parents. In spite of the rapid modernisation experienced by some segments of Indian society, general social attitude toward women have not kept pace with the country's economic and political development (International Foundation of Electrol System 2010).

The population of India on 1st March 2001 at 0:00 hour, stood 1,027,015,247 comprising 531,277,078 males and 495,738,169 females. As widely believed and expected, India became the second country in the world after China to cross officially one billionth mark. It has been certainly

most unlikely that in the history of mankind any country other than India and China would be shaping the lives and future of over a billion people.

The population of India has increased by 183.6 million during the decade 1991-2001 in absolute terms. The decadal percentage growth during 1991-2001 was registered the sharpest decline since independence. It has declined from 23.86 percent for 1981-1991 to 21.34 percent for the period 1991-2001, a decrease of 2.52 percent. The average exponential growth rate for the corresponding period declined from 2.14 percent to 1.93 percent per annum. The change in population since 1901 is given in tabular form in Table 1.

Analysis of data from India's Census 2001 reveals that between 22 and 37 million females are missing from the population. Some argue that natural population trends are causing this shift, but demographic factors alone cannot explain the disparities in the numbers. It is widely acknowledged that this skewed sex ratio is a result of sex-selective abortions (female foeticide), the practice of killing infant girls (female infanticide) and neglecting of the girl-child (resulting in increased mortality rates for girls). The decline of the sex ratio in many parts of India is evidence of a deepening crisis (Population Growth in India 2009).

According to Population Growth in India (2009), the growth of population in India during the twentieth century has chartered and classified into four distinct phases as follows (also shown in the Fig. 1):

1901-1921: Stagnant population
 1921-1951: Steady growth

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Table 1: Census population in India 1901-2001

S. No.	Census year	Population	Sex ratio (females per 1000 males)	Average annual exponential growth rate	Decennial change (%)
1	1901	238,396,327	972	-	-
2	1911	252,093,390	964	0.56	5.75
3	1921	251,321,213	955	-0.03	-0.31
4	1931	278,977,238	950	1.04	11.00
5	1941	318,660,580	945	1.33	14.22
6	1951	361,088,090	946	1.25	13.31
7	1961	439,234,771	941	1.96	21.64
8	1971	548,159,652	930	2.20	24.80
9	1981	683,329,097	934	2.22	24.66
10	1991	843,387,888	927	2.14	23.86
11	2001	1,027,015,247	933	1.93	21.34

Source: Census of India 2001

1951-1981: Rapid high growth

1981-2001: High growth with definite signs of slowing down (declined).

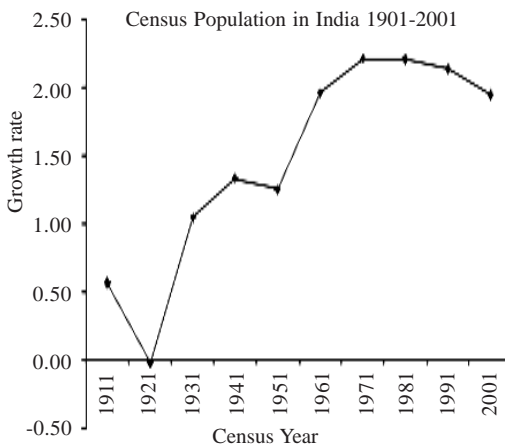


Fig. 1. Census population in India 1901-2001

The population growth in India has been fairly in tune with the classical theory of demographic transition. During the nineteenth century, India witnessed a fluctuation but ultimately more or less stagnant growth of population, which drifted in the twentieth century until 1921. Thereafter, the country passed successively all the phases of demographic transition and is now widely believed to have entered the fifth phase, usually characterized by rapidly declining fertility. In absolute terms, the population of India increased by whopping 180.6 million during the decade 1991 - 2001. Although the net addition in population during each decade has increased consistently, the change in net addition has shown a steady declining trend over the decades starting

from 1961. While 27.9 million more people were added between the decade 1981 - 1991 than in 1971 - 1981, this number declined to 17.6 million in the decades 1981 - 1991 and 1991 - 2001. This implies that although India continues to grow in size, its place of net addition is on decrease. The percentage decadal growth during 1991 - 2001 has registered the sharpest decline since independence. It has declined from 23.86% for 1981 - 1991 to 21.34 percent for the period 1991 - 2001, a decrease of 2.52%. The average exponential growth rate for the corresponding period declined from 2.14% per annum to 1.93% per annum (Population Growth in India 2009).

2. WHAT IS SEX RATIO?

Sex composition of the human population has one of the basic demographic characteristics, which is extremely vital for any meaningful demographic analysis. Indian Census has the tradition of bringing out disaggregated information by sex on various aspects of population. Changes in sex composition largely reflect the underlying socio-economic and cultural patterns of a society in different ways. Sex ratio is defined here as the number of females per 1000 males in the population.

3. METHODOLOGY

This study attempts a focus on some key parameters of population in India. The secondary data has been collected from the Census of India 2001 and also from other reliable sources like United Nations Report, National Council of Educational Research and Training Report. The tabu-

lar format of data gives the information about World Sex Ratio. The study also focused on the sex ratio distribution in different states/UTs (Union territories) of India. The data have been processed and analyzed by simple statistical approach to provide the directions and current picture of sex ratio distribution in the country. The distribution of states/union territories' data has been classified in five (05) categories according to the region viz. Eastern Region (Andaman and Nicobar Island, Bihar, Jharkhand, Orissa and West Bengal), Western Region (Chhattisgarh, Goa, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan, Dadra and Nagar Haveli and Daman and Diu), Northern Region (Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Uttar Pradesh, Uttaranchal, Chandigarh and Delhi), Southern Region (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Lakshwadeep, Pondicherry) and North – Eastern Region (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura). One more category is introduced here for union territories separately, which especially highlight the status of these small populated areas and their gender disparity.

RESULTS AND DISCUSSION

4.1 Sex Ratio

It is natural for an ordinary person to believe that males and females in the population exactly balance each other. It is estimated that around the year 2000, the world had 986 females against 1000 males. Table 2 presents the global sex ratio and that of the most populous countries in Asia as estimated for the year 2000. It has been found that except Indonesia and Japan, other Asian countries showed low sex ratio (United Nation Population Division 2003).

Table 2: Sex ratio of selected countries

S. No.	Country	Sex ratio
1	World	986
2	China	944
3	India	933
4	Indonesia	1,004
5	Pakistan	938
6	Bangladesh	953
7	Japan	1,041

Source: United Nations Population Division 2003

According to the Census of India, 2001, the

sex ratio of the country stood at 933. This was a welcome improvement from Census 1991, which had recorded 927 females for every 1000 males. The trend in sex ratio in India since 1901 is shown in Figure 2. The sex ratio of the country had always remained unfavorable to females (for detail see Sen 2003 and Acharya 2004). Moreover, barring some hiccups, it has shown a long term declining trend.

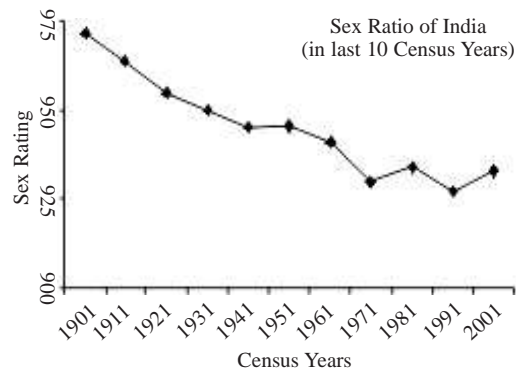


Fig. 2. Sex ratio: India (1901 – 2001)

Source: Census of India 2001

4.2 Sex Composition of the States and Union Territories

In 1901, as many as eleven states and union territories had sex ratio more than unity. Among these, except Kerala all other states and union territories have shown a downward slide. The major states that have been largely responsible for the decline in the overall sex ratio in India are Uttar Pradesh, Bihar, Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Gujarat, Maharashtra and Tamil Nadu. Although the sex ratio in Punjab has been consistently low, it has shown a long-term upward trend and has not contributed to the overall deterioration in sex ratio of the country. In Rajasthan, the sex ratio kept fluctuating in a narrow band and always remained at a low level. In Haryana, Andhra Pradesh and Karnataka states, the sex ratio has remained more or less stagnant. In West Bengal, the sex ratio declined sharply from 1901 to 1941 and then made a gradual turnaround on an upward path to reach 934 in 2001. The sex ratio of Indian population has always been of topical interest for the demographers, social scientists, women's groups, research scholars and various planners and policy makers. The tabular format and graphical presentation is given in Table 3 and Figure 3.

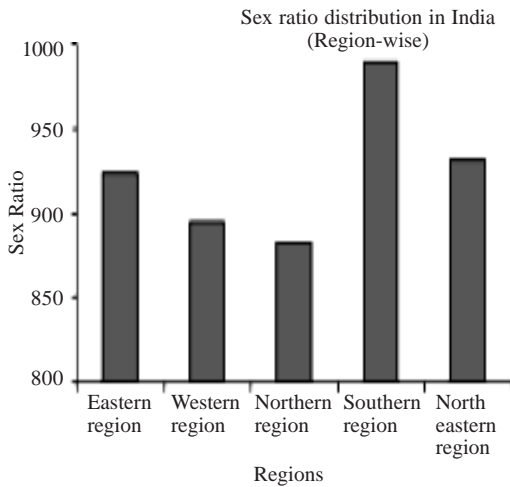


Fig. 3. Sex ratio distribution in India (Region-wise)

Table 3: Sex ratio distribution in India (Region-wise)

S. No.	Region	Sex ratio
1	Eastern region	923
2	Western region	894
3	Northern region	883
4	Southern region	989
5	North-eastern region	932

* From Table 4

4.2 (I) Eastern States Region

In the eastern part of the India, the average sex ratio is just above the national sex ratio. The sex ratio of the region found to be 923. In the Orissa state, it has been highest in Census 2001 from all the eastern region is states/union territory (UT), that is, 972 whereas the sex ratio of union territory Andaman and Nicobar Island and the state Bihar has found ratio 846 and 921 respectively which is lowest in the eastern region and below the national level sex ratio [see Table 4 (1.1 to 1.5)].

4.2 (II) Western States Region

In the western region, there are six states and two union territories. It has been found that the average sex ratio of the region is below the national level (896). Chhattisgarh, the state is considered as a most backward state but the sex ratio is found to be very high as compared to other states/UTs in the region as well as in the country. The sex ratio has been recorded 990. The union

territories of the region have the lowest sex ratio in the country whereas Daman and Diu has sex ratio 709 and Dadra and Nagar Haveli's ratio has been recorded 811. On the other hand, rest of the states are rich in the education, business, economy, living standard etc. but the sex ratio is very low (nearly 921), below the national level [see Table 4(2.1 to 2.8)].

4.2 (III) Northern States Region

The northern state region is the second largest populated region in the country with six states plus two union territories. In the region, the sex ratio has been found to be the lowest in the country. It is below the national level. It has been found that only two states, Himachal Pradesh and Uttaranchal have high sex ratio which is above the national figure.

Delhi, the capital state of India has fourth lowest sex ratio in the country (821). Also, this ratio has been found to be the lowest as compared to previous Census 1991 record of Delhi. Chandigarh, an another Union Territory in the same region, known for its high standard of living with highest per capita income in the country and tops the list of Indian States and Union Territories with a Human Development Index of 0.674. Beside this, the sex ratio has been found lowest in the northern region and second lowest in the country. In Haryana, Punjab and Uttar Pradesh the sex ratio has been found 861, 875 and 898 (below 900) respectively. It has been also observed that out of eight states/union territories of the region, only three (03) followed the increasing trend of sex ratio whereas remaining five (05) has negative trends. [see Table 4 (3.1 to 3.8)].

4.2(IV). Southern States Region

The southern region is the richest region of the country with respect to education, social, culture, nature etc. This region has highest sex ratio among all the regions. It has been also found that all states in this region have also the sex ratio above the national sex ratio level.

As Kerala is the state where highest percentage of literacy rate in male and female. In the study, it has been also found that Kerala is having the highest sex ratio (1058) in the country as recorded in the last Census 1991 followed by

Table 4: Sex ratio distribution of region wise

S. No.	Regions	States / Union territories	Sex ratio (females per 1000 males)				*Sex ratio
			Males	*Decadal growth of during 1991-2001	Census year 1991	Census year 2001	
1.1	Eastern Region	Andaman & Nicobar	192,985	27	818	846	923
1.2		Bihar	43,153,964	28	907	921	
1.3		Jharkhand	13,861,277	23	922	941	
1.4		Orissa	18,612,340	16	971	972	
1.5		West Bengal	41,487,694	18	917	934	
2.1	Western Region	Chhattisgarh	10,452,426	18	985	990	894
2.2		Dadra & NagarHaveli	121,731	59	952	811	
2.3		Daman and Diu	92,478	56	969	709	
2.4		Goa	685,617	15	967	960	
2.5		Gujarat	26,344,053	22	934	921	
2.6		Madhya Pradesh	31,456,873	24	912	920	
2.7		Maharashtra	50,334,270	23	934	922	
2.8		Rajasthan	29,381,657	28	910	922	
3.1	Northern Region	Chandigarh	508,224	40	790	773	883
3.2		Delhi	7,570,890	46	827	821	
3.3		Haryana	11,327,658	28	865	861	
3.4		Himachal Pradesh	3,085,256	18	976	970	
3.5		Jammu and Kashmir	5,300,574	29	896	900	
3.6		Punjab	12,963,362	20	882	874	
3.7		Uttar Pradesh	87,466,301	26	876	898	
3.8		Uttaranchal	4,316,401	19	936	964	
4.1		Southern Region	Andhra Pradesh	37,440,730	14	972	
4.2	Karnataka		25,877,615	17	960	964	
4.3	Kerala		16,369,955	9	1,036	1,058	
4.4	Lakshadweep		29,477	17	943	947	
4.5	Puducherry		487,124	21	979	1,001	
4.6	Tamil Nadu		30,842,185	11	974	986	
5.1	North-Eastern Region	Arunachal Pradesh	517,166	26	859	901	932
5.2		Assam	12,850,608	19	923	932	
5.3		Manipur	1,181,296	30	958	978	
5.4		Meghalaya	1,138,229	30	955	975	
5.5		Mizoram	431,275	29	921	938	
5.6		Nagaland	946,950	64	886	909	
5.7		Sikkim	252,276	33	878	875	
5.8		Tripura	1,555,030	16	945	950	

Union Territory Puducherry with sex ratio (1001). In the rest of the states/UTs, Andhra Pradesh, Karnataka, Tamil Nadu and Lakshadweep the sex ratio have been found as 978, 964, 986 and 947 respectively which is more than the national figure of sex ratio. Also, it has been recorded that the growth in the sex ratio of each states/UTs of the region is in positive direction. [see Table 4 (4.1 to 4.6)].

4.2(V). North-Eastern States Region

The north-east India is the easternmost region consisting of the contiguous Seven Sister States and a state of Sikkim. This region is officially recognized as a special category of states. Tea being an agricultural plantation crop and a

major revenue generator, it plays a vital role in improving the socio-economic condition of the States of North Eastern Region of India. The region has a high concentration of tribal population. The states of Arunachal Pradesh, Meghalaya, Mizoram and Nagaland are mostly inhabited by a number of native tribes. Each tribe has its own distinct tradition of art, culture, dance, music and life styles.

The sex ratio of the north eastern states has been found a stable and nearly equal to the sex ratio of national level. Only the states, Arunachal Pradesh, Nagaland and Sikkim have sex ratio less than national level. Also, it has been found that the sex ratio has increasing trend as compare to the previous Census year. [see Table-4 (5.1 to 5.8)].

Table 5: Sex ratio distribution of union territories:

S. No.	Union Territories	Males	Females	*Decadal growth of population 1991-2001	Sex ratio (females per 1000 males)		*Sex ratio
					Census year 1991	Census year 2001	
1	Andaman and Nicobar Island	192,985	163,280	27	818	846	
2	Chandigarh	508,224	392,690	40	790	773	
3	Dadra and Nagar Haveli	121,731	98,720	59	952	811	844
4	Daman and Diu	92,478	65,581	56	969	709	
5	Lakshadweep	31,118	29,477	17	943	947	
6	Puducherry	486,705	487,124	21	979	1,001	

*Figures are rounded

4.3 Union Territories

A Union Territory is a sub-national administrative division of India. Unlike the states, which have their own elected governments, union territories are ruled directly by the Federal National Government; the President of India appoints an Administrator or Lieutenant-Governor for each territory. As of 2006, there are seven union territories in India, scattered all over the country, rich and unique in their culture, geographic location, pre-independence history, demography, natural beauty, flora, fauna, mammals, birds, shells etc. Apart from these beauties, it has been found that the union territories are very poor in contribution of the significant importance of the women. Women have an important role with men in creating better life of family.

In this study, the average sex ratio of all seven (07) Union Territories has found to be very low that is, 844, which the national sex ratio level. Except Lakshadweep (947) and Puducherry (1001), no other union territories have sex ratio higher than national sex ratio level. Daman and Diu, the second smallest populated union territory (158,059), has very lowest sex ratio in the country. It is surprisingly observed that the sex ratio of the Daman and Diu, compare to last Census 1991 sharply move downward by 73.16 percent. In the Census 2001, the sex ratio has been noted only 709. Chandigarh is the second lowest among all the union territories where sex ratio has found 773. Another important point has been noted that in Chandigarh, Daman and Diu, Delhi and Dadra, and Nagar Haveli, the movement of sex ratio has been in negative direction whereas in Lakshadweep and Puducherry, the growth in sex ratio has shows a positive trend. (see Table 5).

4.4 Distribution of States / Union Territories by Range of Sex Ratio of India

Table 6 shows the distribution of states and union territories by the different ranges of sex ratio and their share in the total population of the country in these ranges. It shows that the distributions of the number of states at 1991 and 2001 Census years.

Table 6: Distribution of states/union territories by range of sex ratio of India (1991 – 2001)

Sex ratio	No. of states/UTs	Percentage of population to total population, 1991	No. of states/UTs	Percentage of population to total population, 2001
880 & below	7	18.92	8	5.97
881 - 915	6	22.02	4	17.45
916 - 950	9	28.73	11	47.23
951 - 985	12	26.89	8	18.08
986 & above	1	3.44	4	11.27

Source: Census of India 2001

It has been interesting to note that although the number of states and union territories with the sex ratio less than 916 remains almost the same, the percentage share of this population has declined from 41 percent to 23 percent. Similarly the number of states and union territories falling within the range of 916-950 marginally alters but the share of this population increased from around 29 percent to 47 percent. The contribution of these two groups of states/union territories appears to be the plausible reason for the increase in overall sex ratio of India.

4.5 Distribution of States/Union Territories by Sex Ratio Below National Level and Above National Level

Table 7 classifies the states and union territories in two classes, namely below and above national sex ratio. It may be noted that the number of states and union territories with sex ratio of below national average has increased from 17 in 1991 to 18 in 2001. In fact the proportion of population in the first category has increased from 54 percent to about 60 percent. In spite of the increase in the number and relative weight in the first category, the overall sex ratio of the country has improved. What could be the possible reason for this? It can be observed that the highly populated states like Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh, which together constituted about 34 percent of India's population in 1991 and increased to 36 percent in 2001, lie in the category of below national average. Therefore, the increase in the overall sex ratio has been possibly due to the relative larger increase in the sex ratio of these four populous States.

Table 7: Distribution of states/union territories by sex ratio below national level and above national level: 1991 and 2001

Sex ratio	Number of states/UT 1991	Percentage of population to total population 1991	Number of states/UT 2001	Percentage of population to total population 2001
Below national average	17	54.29	18	59.81
Above national average	18	45.71	17	40.19

Source: Census of India 2001

Dr. Amartya Sen, the Nobel Prize-winning economist who raised the alarm of 'missing daughters' in the nineties, and other scholars hold that sex-selective abortions are not only intrinsically cruel and a reflection of the low value that society places on women, but that the resulting skewed sex ratio impedes the development of democracy and security. By definition, democracy is government of the people, by the people and for the people. It rest upon fundamental human rights of equal opportunity/treatment and the freedoms to speak, act and believe in a way

that allows people to achieve their dreams. Democracy has a simple definition, but very complex demands. Sen (2003), in his book *Development as Freedom*, argues that anything that negatively impacts the ability of an individual to enjoy freedom is an "unfreedom," which can arise from either inadequate processes or inadequate opportunities. Adverse sex ratios reveal the most glaring example of an unfreedom, in which freedom is snatched away from a female fetus, a baby girl or a girl-child. In the case of feticide, the right to life itself is denied to the girl-child even before she is born, rendering all other rights and freedoms irrelevant. Aside from its threat to democratic principles, India's skewed sex ratio seems to impact both the treatment of Indian women, in particular, as well as the health of Indian democracy in general.

5. CONCLUSION

Women have an important role with men in creating better life of family. They constitute about half of the world's population. Women-the better half-this is how the women are known as throughout the world but is this really true? In the Census of India, 2001, the sex ratio among the major states ranged from 861 in Haryana to 1058 in Kerala. In 1991 also, Haryana with a sex ratio of 865 was at the bottom with Kerala (1036) at the top. The changes in sex ratio over time, therefore, are dependent on the changes in the ratios of the individual states/union territories and their relative share in population.

Why India has such uneven composition of population as compared to most of the developed countries in the world? Several reasons are adduced to explain the consistently low levels of sex ratio and their further decline in the country. Analysis of data from India's 2001 census reveals that between 22 and 37 million females are missing from its population. Some argue that natural population trends are causing this shift, but demographic factors alone cannot explain the disparities in the numbers. It is widely acknowledged that this skewed sex ratio is a result of sex-selective abortions (female feticide), the practice of killing infant girls (female infanticide) and neglect of the girl-child (resulting in increased mortality rates for girls) and also due to illiteracy and marriage in the very early age. The decline of the sex ratio in many parts of India is evidence of a deepening crisis. Gender pref-

erence for male children thus can be seen as undermining the success of the overall development process, because it reflects discrimination on the basis of sex from the earliest to the later stages of life (United Nations 1995).

Gender preference for children of a certain sex can have an impact not only on fertility but also on mortality and sex ratio. There is evidence that advanced medical technologies such as those used for pre-natal sex identification have been exploited as a tool for the selection of children by the sex of the fetus. In other words, ultrasound and amniocentesis have been used as methods for determining whether or not to abort a fetus. In general, a preference for children of one sex, that is, males, may lead to problems, a 'marriage squeeze', deterioration of the family system and have effects on the future fertility of countries; it may even interrupt the advance towards sustainable social and economic development in countries where such preference exists. However, in India the process has taken a skewed turn, fertility levels have dropped accompanied by economic development, but entirely without the social enlighten that must come within and the outcome is small family with its 'one boy and one girl', which contributed the low child sex ratio (Acharya 2004). In other, India's low sex ratio is a stark indicator of the inferior position of women in the Indian society. Pranab Bardha (1982), mentions in early 1970s, that the historical, cultural, ecological and sociological causes are some reasons behind of the low sex ratio in India. The Committee on Status of Women in India concluded that 'an increase in the neglect of female lives as an expendable asset' is the only reason for the declination of the females in the Indian society (Committee on Status of Women in India 1975).

Though these are some of the explanations for the declining sex ratio in India, but apart from these, there are some factors like socio-cultural and economic played major role in the process of declining sex ratio. As Hindu society has been divided into four castes (the higher caste is Brahmins who are engaged in ritual aspects, second are the Khatriya, who are engaged in the military, third are the Baisya, who are engaged in the commercial and fourth are the Sudra, who are the lowest caste and these caste serve the ab-ove three castes). The lower caste (Sudra) people discriminate the female child, because it is difficult for them to find out a suitable bridegroom for

their daughter, and if somehow they manage to find one, then they have to give heavy dowry during the marriage. So to escape from this situation, they practice the female infanticide. In the economic factor, in the Indian society culturally it is not accepted that Indian women should work or to contribute on the household economic, so they become an economic burden for the family, where they suffer discrimination and neglect in their families. Last few decades, many feminist organizations in India like National Council of Women in India of Pune, National Commission of Women of New Delhi and Women's Foundation of New Delhi are raising their voice against female infanticide, gender discrimination and violence against the women but the present evidence shows that the Indian women have the subordinate position in the society (Acharya 2004).

From the above discussion it is evident that the son preference in India is manifested in the form of post – natal discrimination against the girl child. The gender preference is closely associated with the declining sex ratio and infant and child mortality. Also, it seems that the increasing new medical technologies and facilities may provide more availability for induced abortions, which may cause a decline in the family size norms in near future. So it is necessary for improving the children's chances of survival, and also for raising women's status, guaranteeing better access to opportunities for their work outside the home and education, which results in the reduction of sex preference with the balance in sex ratio.

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