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Sex Ratio: Trends in Rural-Urban Differentials

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Abstract

Sex ratio, measured in terms of number of females per thousand males, is one of the best indicators of status of women in society. The disparity in the number of males and females in any population is of interest to geographers because of the contrasting roles played by two sexes in economy and society. However, the rural-urban differentials in sex ratio are of tremendous importance as they reflect the general tempo of life and the nature of sex selectivity in rural-urban flows of population.

Right from the beginning of census operations, the sex ratio in India has been adverse to women not only in rural areas but also in urban counterparts. However, urban areas were characterised with excessive deficiency of women resulting into more rural-urban differentials. These rural-urban differentials in sex ratio in India were largely the product of male-selectivity in rural-urban migration which, in turn, was the result of high cost of living and problem of housing for families in urban centres.

The present study has endeavoured, therefore, to find out the rural-urban differentials in sex ratio in India and to explain their trends from 1901 to 2001. All the relevant data meant for the purpose have been obtained from various publications of the Census of India.

Introduction

Sex ratio is one of the best indicators of status of women in the society. In view of the partly contrasting and partly complementary roles of the two sexes in the economy and society, the study of their ratio to each other becomes of great interest to a population geographer. Sex ratio is an index of the socio-economic conditions prevailing in an area and is a useful tool for regional analysis (Franklin, 1956). In itself, the sex ratio is a function of three basic factors of sex ratio at birth, differential in mortality of the two sexes at different stages of life and sex-selectivity among the migrants (Clarke, 1960). In its own turn, sex ratio has a profound effect on other demographic elements like growth of population, marriage rates, occupational structure, etc. (Shyrock, 1976).

In the Indian census, the term Sex Ratio connotes the number of females per thousand males. The disparity in the number of males and females in any population is of interest to geographers because of the contrasting roles played by two sexes in economy and society. Besides, the sex

ratio differences also reflect effectively the migration differentials between different areas. The rural-urban differences in sex ratio are of tremendous importance as they reflect the general tempo of life and the nature of sex selectivity in rural-urban flows of population. The developing countries have been characterized with male-selective out-migration from rural areas resulting in relatively high sex ratios there (Mehta and Kaur, 1983).

Objective of the Study

The sex ratio has been on a continuous decline since the beginning of this century with only some nominal exceptions. The urban places have been more affected as compared to the rural areas of India by the abnormality of the sexes due to some specific natural and socio-economic conditions. The basic objective of the present paper is to study the trend of rural–urban differentials in sex ratio in India from 1901 to 2001.

Data Base And Methodology

The study is mainly based on the secondary sources of data. Census of India (2001) provides most of the data required for the study. Some relevant data meant for the purpose have also been obtained from earlier publications of the Census of India. Various occasional papers published by Census of India, Office of the Registrar General, New Delhi, were also consulted.

Decadal variations in rural-urban differentials have been discerned from 1901 to 2001 considering the data for a century. The trend of rural-urban differential was calculated by subtracting urban sex-ratio from the rural one. The census map of India (2001) has been adopted as the base map.

Sex-Ratio In India: A Temporal Analysis, 1901-2001

Right from the beginning of census operations, the sex-ratio in India is adverse to women. For obvious reasons, the sex ratio is lower in towns. Interestingly, it has suffered a consistent decline all through the present century except during the decades of 1941-51 and 1971-81 (Table 1).

Table 1 reveals a fall in the sex-ratio from 972 to 964 in the decade 1901-11. During this decade, in addition to famine, there were plague and malaria. The fall in the ratio was attributed to female mortality from these diseases, which was far in excess of the male deaths from famine. The sex ratio declined further to 955 by 1921 due to plague which continued from the previous decade and the outbreak of influenza epidemic which was especially fatal to women and more particularly to young married women. It continued to register decline from decade to decade except in the decade 1941-51, in which partition may have contributed to higher losses and wastage of male lives in certain tracts counter-balancing the continuing diminution of the sex-ratio in others (Mitra, 1979).

After 1951, the sex ratio, again, dropped for two consecutive decades to reach 930 in

Table 1: India: Sex Ratio, 1901-2001

Census Year	Females Per 1000 Males
1901	972
1911	964
1921	955
1931	950
1941	945
1951	946
1961	941
1971	930
1981	935
1991	927
2001	933

Source: Census of India (2001)

1971. in fact, between 1961-71, the country saw the sharpest decline of 11 points in the sex ratio. However, during 1971-81, a slight improvement of 4 points (from 930 in 1971 to 934 in 1981) is noticed in contrast to the declining trend. Some of the demographers in India thought that this rise in sex-ratio may be due to the improvement brought in the status of women as well as mortality conditions leading to the higher expectancy of life of females especially during 70's decade.

But, this upward trend is upset by the results of the sex ratio of 1991 census which has revealed a further decline of 7 females making it 927 females per 1000 males in India. According to Census of India (2001), the sex ratio stands at 933 for the country as a whole. This is a welcome improvement over the 1991 census and needs to be maintained in future.

It is interesting to note that the sex ratio in India has suffered a consistent decline all through the 20th century except during the decades of 1941-51, 1971-81 and 1991-2001. Some of the reasons attributed to this declining trend in sex ratio of India are: greater neglect of females especially at the earlier ages, differences in sex ratio at birth, premature cohabitation and child-bearing coupled with unskilled midwifery, male sex-preference and discrimination of female sex, female infanticide, uneven sex migration patterns, hard work for females particularly among lower income groups which constitute the bulk of the population, high female mortality expressed in the form of female foetal, infant and maternal mortalities and general female mortality, the increasing trend of female foetal abortions on the basis of sex-determination tests, greater undercount of females in the census enumerations, the predominance of male sex among the acceptors of family planning as well as among the low birth rate communities, general adverse conditions of climate, nutrition, ventilation and house accommodation, and other social, economic, psychological and communal problems of females in the society due to the poor status of women, and the like (Reddy, 1996).

Rural – Urban Differentials in Sex Ratio, 1901-2001

The rural-urban differentials in sex ratio in India were the result of sex-selectivity among the rural-urban migrants in the past. More males than the females moved from rural areas to urban areas. Such a rural-urban migration takes place due to push and pull forces operating in the two areas. However,

the male-selective influx into urban areas is the result of (i) prejudice against female employment and mobility, (ii) scarcity of jobs suitable for females, and (iii) high cost of living and problem of housing in urban centres which discourage and compel many male migrants to leave their families behind. Moreover, the joint family system prevailing in rural areas facilitates male-selective migration as the male migrant is assured of the safety and security of his family left behind (Krishan and Chan NA, 1973). Thus, the rural-urban differential in sex ratio was largely the product of male-selectivity in rural-urban migration. This was in contrast to the excess of females among the rural-urban migrants in case of Western countries.

Right from the beginning of 20th century since 1901, the sex ratio in India had always remained unfavourable to females not only in rural areas but also in urban areas (Fig. 1). However, urban areas were characterized by excessive deficiency of women compared to their rural counterparts which was in contrast to the Western countries where the urban sex ratios were more in favour of females.

The rural areas witnessed a continuous decline in sex ratio since 1901. The decline of 13 points during 1981-91 is a matter of serious concern. The main reason for this is male-biased birth rates (or masculinity at birth) and high mortality rate among females (due to their neglect) at almost all ages.

On the other hand, the urban sex ratio was 910 in 1901 and decreased continuously and reached 831 till 1941. But, it increased to 860 in 1951, as a result of the influx of Muslim women to the towns for security reasons, at the time of partition. They migrated later on either to Pakistan or to some other parts of the country. Consequently, the urban sex ratio again decreased 15 points and reached 845 in 1961. More male migrants from villages to cities also led to a decline of urban sex-ratio.

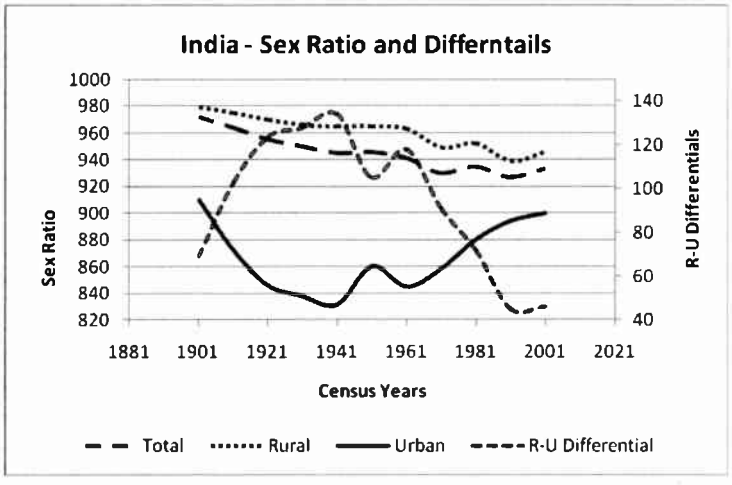

Fig. 1: India: Sex Ratio and Rural-Urban Differentials

But, after that it continuously increased and reached 894 in 1991.

The reasons for this increase in sex-ratio are family migration to urban areas and improvement in living conditions, with the availability of medical facilities has led to greater survival of both males and females. Moreover, certain social change leading to somewhat greater attention towards the girl child in recent years in urban areas also increased urban sex ratio to some extent.

The increase in urban sex ratio and decline in rural sex-ratio after 1961 are compensatory to each other and the resultant rural-urban differential decreased 27 points in 1961-71, 19 points in 1971-81, 27 points in 1981-91 and 1 point in .1991-2001 (Fig. 2).

The rural-urban differential declined from an all time high of 134 in 1941 to 45 in 1991. The main reasons for this considerable fall in differential over the period 1901-91 has been due to both increasing urban sex ratio and decreasing rural sex ratio. The decrease in rural sex-ratio from 979 (1901) to 939 (1991), which is almost for a century can be explained in terms of faster fall in male mortality rate in rural areas than female mortality rates and family out-migration. Secondly, the rapid development of transport and communication has somewhat put breaks on the phenomenal migration from rural to urban areas, by facilitating the probability of commuting from surrounding areas. This factor has reduced the influence of factor of male-selective migration. The increase in urban sex ratio from 845 in 1961 to 900 in 2001 is a result of increase in status of women, better health and medical facilities, bringing down the female mortality rates in urban areas. This shows that the rural-urban differential is on a continuous decline at a varying rate.

Trends in Rural-Urban Differentials, 1901-2001

The areal differences in sex ratio reflect the variations in social attitudes of the populations. The sex ratio is comparatively high among advanced societal groups where the level of status of women is high. However, despite the prevailing differentials in sex ratio between rural and urban areas as well as their inter-state variations, there have been noticeable trends in sex ratio decline during the last one century. As Table 2 indicates, the decline in differentials have been observed in more than half of the states, though its degree varied. In 1901, the maximum and minimum sex ratio in rural areas was 1113 in Mizoram and 836 in Punjab with a difference of 277 females per 1000 males. In 2001, the maximum rural sex ratio was 1059 females per 1000 males in Kerala, while the minimum was 866 females per 1000 males in Haryana, giving a difference of 193 females per 1000 males.

Similarly, the maximum urban sex ratio in 1901 was 1048 in Tamil Nadu while the minimum was 423 in Nagaland, making a difference of 625 females per 1000 males. In 2001, the maximum urban sex ratio was 1058 in Kerala and minimum was

Table 2: India: Sex Ratio by Rural-Urban Residence, 1901-2001

Country/States/ Union Territory	Sex Ratio									SRD		
	1901			1951			2001			2001	1901	2001-1901
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban			
India	972	979	910	946	965	860	933	946	900	46	69	-23
Andhra Pradesh	985	983	999	986	985	987	978	983	965	18	-16	34
Arunachal Pradesh	NA	NA	NA	NA	NA	NA	893	914	819	95	NA	-
Assam	919	929	576	868	878	663	935	944	872	72	353	-281
Bihar	1054	1057	997	990	1001	842	919	926	868	58	60	-2
Chhattisgarh	NA	NA	NA	NA	NA	NA	989	1004	932	72	NA	-
Goa	1091	NA	NA	1128	1145	1017	961	988	934	54	NA	-
Gujarat	954	951	965	952	964	920	920	945	880	65	-14	79
Haryana	867	861	908	871	877	845	861	866	847	19	-47	66
Himachal Pradesh	884	899	800	912	932	664	968	989	795	194	99	95
Jharkhand	NA	NA	NA	NA	NA	NA	941	962	870	92	NA	-
Jammu & Kashmir	882	888	809	873	882	823	892	917	819	98	79	19
Kerala	1004	1008	953	1028	1033	992	1058	1059	1058	1	55	-54
Karnataka	983	984	976	966	974	941	965	977	942	35	8	27
Madhya Pradesh	990	995	937	967	975	907	919	927	898	29	58	-29
Maharashtra	978	1003	862	941	1000	807	922	960	873	87	141	-54
Manipur	1037	1038	1036	1036	1039	633	974	963	1009	-46	2	-48
Meghalaya	1036	1047	725	966	991	683	972	969	982	-13	322	-335
Mizoram	1113	1113	NA	1041	1049	845	935	923	948	-25	NA	-
Nagaland	973	997	423	999	1005	739	900	916	829	87	574	-487
Orissa	1037	1039	967	1022	1029	881	972	987	895	92	72	20
Punjab	832	836	804	844	854	807	876	890	849	41	32	9
Rajasthan	905	898	947	921	919	928	921	930	890	40	49	-9
Sikkim	916	916	NA	907	912	686	875	880	830	50	72	-22
Tamil Nadu	1044	1043	1048	1007	1014	986	987	992	982	10	-5	15
Tripura	874	887	595	904	909	836	948	946	959	-13	292	-305
Uttaranchal	NA	NA	NA	NA	NA	NA	962	1007	845	162	NA	-
Uttar Pradesh	937	940	917	910	925	820	898	904	876	28	23	5
West Bengal	945	994	650	865	939	660	934	950	893	57	344	-287
A&N Islands	318	318	NA	625	654	NA	846	861	815	46	NA	-
Chandigarh	771	771	NA	781	781	NA	777	621	796	-175	NA	-
Dadra & Nagar Haveli	980	980	NA	946	946	NA	812	852	691	161	NA	-
Daman & Diu	995	NA	NA	1125	1110	1151	710	586	984	-398	NA	-
Delhi	862	916	817	768	837	754	821	810	822	-12	99	-111
Lakshadweep	1063	1063	NA	1043	1043	NA	948	959	935	24	NA	-
Pondicherry	NA	NA	NA	1030	1030	NA	1001	990	1007	-17	NA	-
Cofficient of Variability	24.1	31.5	65.37	10.9	10	47.71	7.31	10.1	8.4			

NA: Data Not Available. SRD: Sex Ratio Differential

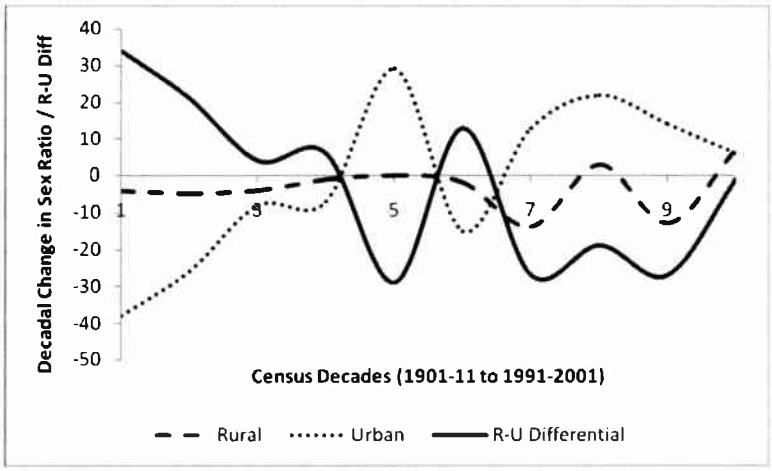

Fig. 2: India: Decadal Change in Sex Ratio by Rural-Urban Residence, 1901-2001

795 in Himachal Pradesh. This caused a difference of 263 females per 1000 males. Thus, as a whole, the sex ratio is showing a declining trend which is caused by a decline in the maximum and increase in minimum sex ratios and by reducing the difference between them.

One redeeming feature of sex composition of India's population is that the regional disparity has got squeezed over time. In 1901, the urban sex ratio's coefficient of variability (65.37 per cent) was much higher than rural (31.46 per cent) implying that urban sex ratio had a greater variation and inconsistency. However, in 2001, not only both the areas displayed a decline in disparity, coefficient of variability being 10.10 per cent in rural and 8.40 per cent in the urban areas, but a tremendous decline in disparity within urban areas was noticeable.

Among the various states of India Himachal Pradesh was noted for the largest difference (194 females per 1000 males) in average of its rural (989 females per 1000 males) and urban (795 females per 1000 males) sex-ratio. The functional structure of towns, most of which were administrative centres, along with recency of migration to them are responsible for this situation.

Uttaranchal was also noted for a large differential (162 females per 1000 males) in average rural (1007) and urban (845) sex-ratio. The large differential was related to an unusually low sex-ratio and the rural being more than national average (946). Male selective migration from rural to urban areas explains this phenomenon. The other states which follow the suit are Jammu & Kashmir (98 females per 1000 males), Arunachal Pradesh (95 females per 1000 males), Jharkhand (92 females per

Table 3: India: Spatial Disparities in Sex Ratio, 1901-2001

Census Year {(s/Mean) * 100}	Coefficient of Disparity # Total	Rural	Urban
1901	24.06	31.46	65.37
1951	10.92	10.04	47.71
2001	7.31	10.10	8.40

Disparity defined as variability

1000 males), Orissa (92 females per 1000 males), and Maharashtra (87 females per 1000 males).

Among the union territories, the maximum rural-urban differential (161 females per 1000 males) in sex ratio is found in Dadra and Nagar Haveli and is followed by Andaman & Nicobar Islands (46 females per 1000 males) and Lakshadweep (24 females per 1000 males).

On the other hand, lowest rural-urban differential (+1) in sex ratio is found in Kerala where females in both rural (1059) and urban (1058) areas exceed males the matrilineal society in Kerala and relatively high level of status of females account for it.

Eight out of 35 states and union territories have urban sex ratio more than rural. These are mainly North-East states of Tripura (-13), Meghalaya (-13), Manipur (-25) and Mizoram (-46) and among union territories are Delhi (-12), Pondicherry (-17), Chandigarh (-175). and Daman & Diu (-398).

On the basis of the trend of rural-urban differential all the states and union territories can be divided in following five categories (Fig 3).

Categories and Nomenclature

1. Areas with rural sex-ratio higher than urban in 1901 as well as in 2001 with increasing differential trend.
2. Areas with rural sex ratio higher than urban in 1901 as well as in 2001 with declining differential trend.
3. Areas with rural sex ratio higher than urban in 2001 but reverse was true in 1901 with declining differential trend.
4. Areas with urban sex ratio higher than rural in 2001 but reverse was true in 1901 with declining differential trend.
5. Areas with rural sex ratio higher than urban in 2001 but reverse was true in 1901 with increasing differential trend.

1. Areas with Rural Sex-Ratio Higher than Urban in 1901 as well as in 2001 with Increasing Differential Trend

The states where rural sex ratio has always been higher than urban with increasing differential trend are Himachal Pradesh (+95), Karnataka (+27), Orissa (+20), Jammu & Kashmir (+19), Punjab (+9) and Uttar Pradesh (+5). In all these sates, rural sex ratio is much more than the urban sex ratio. The main reason is sex-selectivity among migrants. A large number of males in these states migrate to nearby states and urban areas in search of employment. But

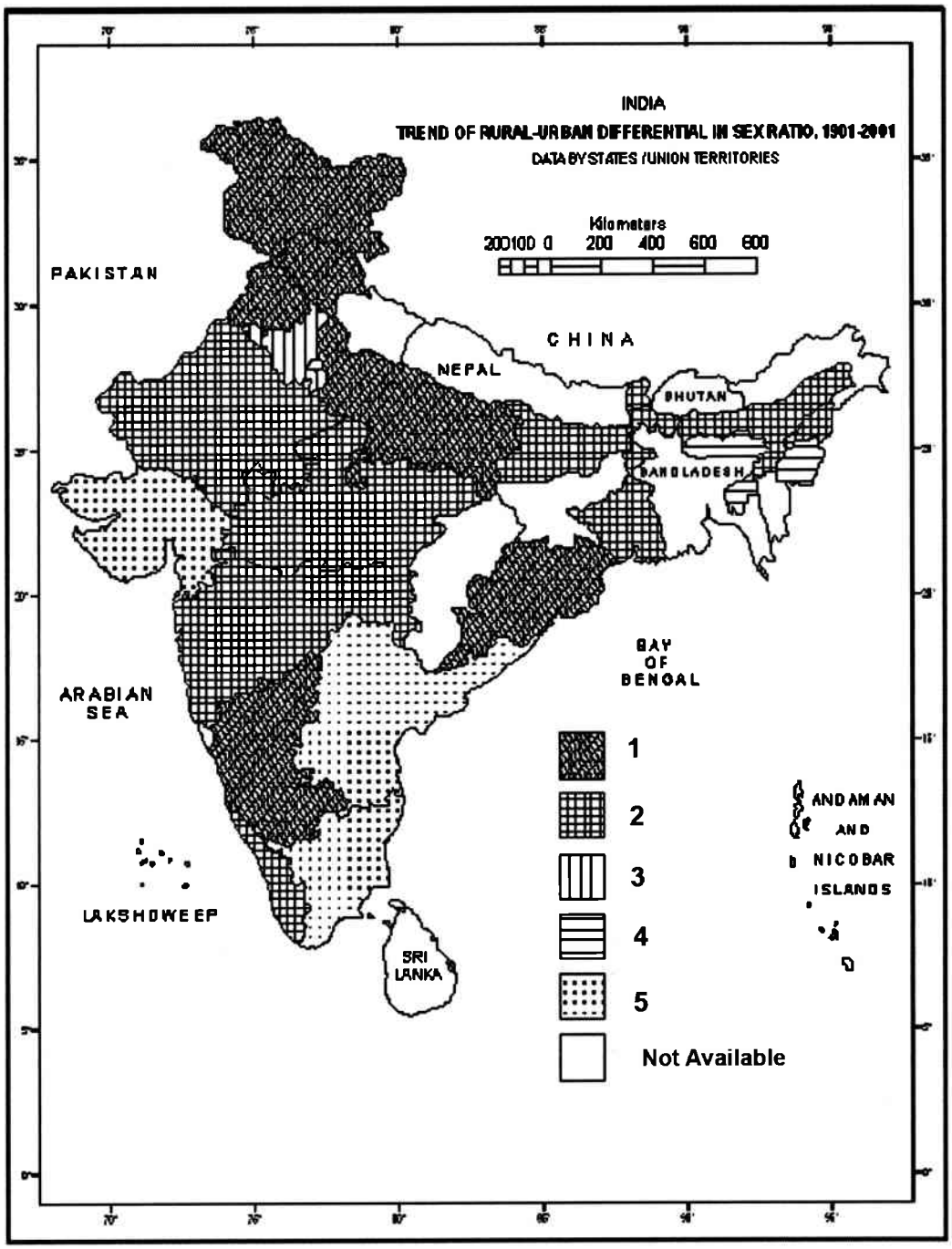

Fig 3: India: Trend of Rural-Urban Differential in Sex Ratio, 1901-2001.For details of legend see text "Categories and Nomenclature"

in Punjab, male migration is more across the international boundaries than to nearby states. Therefore, the sex ratio in rural areas increases in comparison to urban counterparts.

2. Areas with Rural Sex Ratio Higher than Urban in 1901 as well as in 2001 with Declining Differential Trend.

One-fourth of the states and union territories fall in this category. The states where rural sex ratio is higher than urban in 1901 as well as in 1991, but with declining rural-urban differential trend are Nagaland (-487), West Bengal (-287), Assam (-281), Kerala (-54), Maharashtra (-54), Madhya Pradesh (-29), Sikkim (-22) Rajasthan (-9) and Bihar (-2). Most of these states fall in northern half of India. The decline in differential is quite sharp in the eastern hill states of Nagaland, Assam, Sikkim and in the adjoining state of West Bengal. In these states, urban sex-ratio witnessed a sharp increase over the period of a century, which reduced the gap between rural and urban sex ratios. In other states, either both the sex ratios declined (e.g. Madhya Pradesh and Bihar) or both the sex ratios increased (e.g. Kerala) or urban sex ratio decreased and rural sex ratio improved (e.g. Rajasthan)resulting into decline in rural-urban differential.

The improvement in urban sex ratio of these states is due to the availability of better medical, health and sanitation facilities, which reduced the mortality rate among women to some extent in pre-natal and post-natal stages. Besides, the better transportation and communication network and availability of employment in cottage and small scale industries within the rural areas for young unemployed population have reduced the rural-urban male-selective migration. Fig 3

3. Areas with rural sex ratio higher than urban in 2001 but reverse was true in 1901 with declining differential trend.

The only state which falls in this category is Haryana (-43). This is the state where there is excessive deficiency of females per thousand males and is characterized with lowest sex ratio amongst the states of India as per 2001 census. An unusually low sex ratio at birth and a higher rate of mortality among females explain this phenomenon.

The gap between rural and urban sex ratio in Haryana is decreasing but,at present, it is in favour of rural areas. Family migration to urban places has been predominant, notwithstanding male-selective migration to industrial towns like Faridabad township, Ballabhgarh, Gurgaon, Bahadurgarh, Sonipat, Yamunanagar and university towns like Hisar, Rohtak and Kurukshetra (Krishan & ChanNA, 1973).

The rural character of small towns and preponderance of family migration to large towns have been the major factors to keep rural and urban sex ratios in Haryana quite close to each other and thereby give a decreasing trend of differential.

4. Areas with Urban Sex Ratio Higher than Rural in 2001 and Reverse was True in 1901 with Decline in Differential Trend

The states of Meghalaya (-335), Tripura (-305), Manipur (-48) and the union territory of Delhi (-111) experienced this phenomena. In these eastern hill states and the union territory of Delhi, urban sex-ratio became higher than rural with tremendous decline in female mortality rates in urban areas as compared to the rural. In Delhi, particularly, intense commuting from as far a distance of 100 km around has replaced male-selective migration. The rural-urban differential is showing a declining trend. In Meghalaya, the urban sex ratio improved to a great extent from 782 females per 1000 males in 1901 to 982 females per 1000 males in 2001, but the rural sex ratio declined from 1047 in 1091 to 969 in 2001. In Tripura, both the rural and urban sex ratios improved, though the increase was very pronounced in urban sex ratio which increased from 595 females per 1000 males in 1901 to 959 females per 1000 males in 2001. But in case of Delhi, the sex ratio declined in rural and increased in urban areas. The decline in rural areas (-106) was much sharper than the increase in urban (+5) sex ratio. In Manipur, both the rural and urban sex ratio declined (-75 and -27 respectively) and this decline was sharper in rural areas.

5. Areas with Rural Sex Ratio Higher than Urban in 2001 but Reverse was True in 1901 with Increasing Differential Trend

Gujarat (+79), Andhra Pradesh (+34) and Tamil Nadu (+15) are the states where the differential has increased in favour of rural areas in 2001 as compared to 1901. With increase in female literacy rates, availability of transportation, medical facilities, drinking water and sanitation facilities in rural areas, the physical and social conditions of women have improved. All this increased the life expectancy of women at all ages in rural areas too. With improvement in women's status, the sex-ratio declined at a very slow rate in rural areas such as in Andhra Pradesh, rural sex ratio decline was -6 females per 1000 males. In comparison to this, urban sex ratio decline was 40 points. Similarly, in Gujarat, sex-ratio declined 2 points in rural areas and by 58 points in urban areas between 1901 and 2001. But the case of Tamil Nadu is some what different where both rural and urban areas experienced a great decline i.e. 62 and 88 points respectively between 1901-2001. Though the sex ratio declined in both the rural and urban areas between 1901 and 2001, but the fall in urban sex ratio was much faster and thereby gives increasing rural- urban differential trend.

Conclusions

- Right from the beginning of the census operations, the sex ratio in India has been adverse to women not only in rural areas but also in urban counterparts. However, urban areas were characterized with excessive deficiency of women resulting

into more rural-urban differentials. These rural-urban differentials in sex ratio in India were largely the product of male-selectivity in rural-urban migration which, in turn, was the result of high cost of living and problem of housing for families in urban centres.

- The rural-urban differential is declining continuously but at varying rates in different areas. The increase in urban sex ratio and decline in rural sex ratio after 1961 are compensatory to each other and the resultant rural-urban differential decreased by 27 points in 1961-71, 19 points in 1971-81 and 28 points in 1981-91. The increase in urban sex ratio is a good symbol of social change in women's status but decline in rural sex ratio is a painful scene of rural areas and is a matter of serious concern. The rural-urban differential declined in nearly 3/5th of the states/ union territories particularly in areas which had shown a large rural-urban differential in 1951. Infact, greater the differential, more rapid was the decline over the decades. Some states witnessed a slight fall in rural sex ratio along with increase in its urban counterpart. Instances are that of West Bengal, Nagaland. Sikkim, Meghalaya, and Delhi. There are others such as Tripura, Assam, Punjab and Kerala where both the rural and urban sex-ratios improved but the rise in urban sex-ratio was more, thereby, lowering the rural-urban differential.
- It can be inferred from trends that male-selective migration now-a-days does not remain crucial in the circumstances. Besides, the factors of feminization of cities, commuting and family migration are playing an important role in reducing rural-urban differentials in sex ratio.
- One redeeming feature of sex-composition of India's population is that the regional disparity has got squeezed over time. In 1901, the urban sex-ratio's coefficient of variability (65.37) was much higher than rural (31.46) implying that urban sex ratio had a greater variation and inconsistency. However, in 2001, not only both the areas displayed a decline in disparity, coefficient of variability being 10.10 in rural and 8.40 in the urban areas, but a tremendous decline in disparity within urban areas was noticeable.
- In fine, family migration as a result of increased social approval for out-of-home female mobility, large number of avenues for females towards nuclear families, improved mortality rates, feminization of cities, commuting, index of relative advancement of society in terms of housing facilities, finance and culture in urban areas indicate a healthy trend of minimizing the rural-urban differential in sex ratio in the country.

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