
DEMOGRAPHIC CHARACTERISTICS OF HARYANA IN POST REFORM PERIOD (1991 TO 2011)

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1. Introduction

As per Malthusian theory, population is dynamic and its growth rate is geometric growth and it is the urge of human population to change it by natural force and it is also control of natural forces. Demographic Characteristics determined by natural factors, geographical factors, climatic factors and socio-economic factors. Birth and death are demographic natural events while migration is a socio-economic factor of demographic changes in a particular geographic region. Demographic characteristics of the any geographic region are also determined by age sex population structure and distribution. Sharma (2008) has stated that social progression referred to matters of social fairness, social consistency and value of population. The previous study in Haryana by Rani and Tali (2017) studied on determinants of spatial pattern of Sex ratio in the state. They founded that sex ratio is an important parameter for analysis of demographic and cultural development. They used backward step regression model which is based on secondary data is collected from census of India (2011). They further stated that changes in sex ratio largely that reflect the underlying socio-economic and culture patterns of a society in different ways. They found that determinants of changes in sex ratio vary from sex differentials in mortality, sex selective migration, sex ratio at birth times and sex differentials in population enumeration. They suggested that it is realized that no economic policy instrument in the form of grant of monetary benefits for the girl's family or any policy of social change can improve the sex ratio in the favour of females and apart from other policy measures an internal change in the outlook of the people is urgently arranged. Sharma (2008) further explained that development is not uniform in Haryana. Development is depending upon the demographic characteristics of the state or region.

2. Objectives

This Study has been planned with three specific objectives- to know population Change in Haryana in post reform period; to find out vital events in the State; and to draw age sex pyramid in the Haryana. All the objectives are interrelated and differentiate in the social groups and it can be measured by various ways.

3. Data Source and Methodology

Main sources of data for this study are – census of India (1991, 2001, 2011), NSSO (2016), Vital Statistics (2002 to 2011). Percentage change in population has measure by using following maxim-

Percentage change (%) = $(\text{pop2011} - \text{pop2001}) / \text{pop 2001} * 100$ (during 2001 to 2011).

Growth rate (%) = $0.1 * \ln(\text{pop2011} / \text{pop2001})$ (exponential annual growth rate)

The analyses have been done district wise in Haryana. State has selected purposely for this study.

4. Results and Discussion

Outcome of data analyses have been discussed into following sub-headings

- 1: Population change in Post Reform Period
- 2: Vital events in the State
- 3: Age-Sex Population Structure and Sex Ratio

1: Population Change in Post Reform Period

Sustainable Development Goals (SDGs) are not related to population dynamics directly, but all 17 goals are related to the population change and development issues. To achieve the SDGs, it is important to know the demographic events in a particular region which is the best determinants of socio-economic development. Table 1 clearly indicates the population growth rate has declined over the period. During 1991 to 2001, population growth rate was 2.5 percent while it has declined by 1.81 percent during 2001 to 2011 in Haryana. Although all the districts of Haryana has reported positive growth rate of population, Gurgaon has reported highest percentage of population growth by 5.5 percent during 2001 to 2011 whereas it was 3.7 percent in 1991 to 2001 followed by Mewat (Nuh) district. Mewat was part of Gurgaon while Palwal was the part of Faridabad that is why population growth rate in Faridabad has declined in 2011 census. Lowest population growth rate has recorded in three districts of Haryana such as Jhajjar, Ambala and Jind by 0.85, 1.06 and 1.14 percent respectively. Five districts of Haryana such as Gurgaon, Mewat, Faridabad, Palwal and Panipat have reported population growth rate more than state level (1.81%) and all the districts have reported less than state level.

Table 1: Total Population and population growth rate (%) during 1991-2001 and 2001-2011

| District | Total Population | | | | Growth rate | |
|-------------------------|------------------|-----------------|-------------------|-----------------|---------------|---------------|
| | 1991 | 2001 | 2001 Estimated | 2011 | 1991- 2001 | 2001- 2011 |
| HARYANA | 16463648 | 21144564 | 21144564 | 25351462 | 2.502 | 1.815 |
| Gurgaon | 1146090 | 1660289 | 870514 | 1514432 | 3.706 | 5.537 |
| Mewat (Nuh) 2005 | | | 789768 | 1089263 | NA | 3.215 |
| Faridabad | 1477240 | 2194586 | 1365430 | 1809733 | 3.958 | 2.817 |
| Palwal (2008) | | | 829144 | 1042708 | NA | 2.292 |
| Panipat | 698000 | 967449 | 967449 | 1205437 | 3.264 | 2.199 |
| Panchkula | 310000 | 468411 | 468411 | 561293 | 4.128 | 1.809 |
| Karnal | 1035000 | 1274183 | 1274183 | 1505324 | 2.079 | 1.667 |
| Rewari | 611000 | 765351 | 765351 | 900332 | 2.252 | 1.624 |
| Kurukshetra | 669000 | 825454 | 825454 | 964655 | 2.101 | 1.558 |
| Fatehabad | 646000 | 806158 | 806158 | 942011 | 2.215 | 1.557 |
| Yamunanagar | 806000 | 1041630 | 1041630 | 1214205 | 2.565 | 1.533 |
| Sirsa | 903536 | 1116649 | 1116649 | 1295189 | 2.118 | 1.483 |
| Bhiwani | 1163000 | 1425022 | 1425022 | 1634445 | 2.032 | 1.371 |
| Kaithal | 782000 | 946131 | 946131 | 1074304 | 1.905 | 1.270 |
| Narnaul(Mahendragarh) | 681869 | 812521 | 812521 | 922088 | 1.753 | 1.265 |
| Hisar | 1209000 | 1537117 | 1537117 | 1743931 | 2.401 | 1.262 |
| Sonipat | 1045000 | 1279175 | 1279175 | 1450001 | 2.022 | 1.253 |
| Rohtak | 777000 | 940128 | 940128 | 1061204 | 1.906 | 1.211 |
| Jind | 980000 | 1189827 | 1189827 | 1334152 | 1.940 | 1.145 |
| Ambala | 806000 | 1014411 | 1014411 | 1128350 | 2.300 | 1.064 |
| Jhajjar | 715000 | 880072 | 880072 | 958405 | 2.077 | 0.853 |

Source: Census of India, 1991, 2001, 2011

Table 2 indicates decadal population growth rate since 1901 to 2011, all the districts of Haryana has reported positive population growth rate after 1921. Due to influenza epidemic

in 1918, the population growth was low in the state, while in 1911 all the districts have reported negative growth rate of population and some of the districts in 1921 districts.

Table 2: Decadal population change (%) in different districts of Haryana since 1901 to 2011

| | 1901 | 1911 | 1921 | 1931 | 1941 | 1951 | 1961 | 1971 | 1981 | 1991 | 2001 | 2011 |
|----------------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HARYANA | | -9.70 | 1.95 | 7.14 | 15.63 | 7.60 | 33.79 | 32.22 | 28.75 | 27.41 | 28.43 | 19.90 |
| Panchkula | | -16.12 | -6.92 | 15.32 | 14.13 | 7.50 | 30.53 | 33.46 | 39.39 | 57.61 | 50.91 | 19.83 |
| Ambala | | -16.12 | -6.92 | 15.32 | 14.13 | 7.50 | 24.14 | 18.90 | 22.27 | 22.31 | 25.78 | 11.23 |
| Yamunanagar | | -15.33 | 7.94 | -0.66 | 14.46 | 7.84 | 40.82 | 29.24 | 32.26 | 27.41 | 29.19 | 16.57 |
| Kurukshetra | | -9.63 | 3.62 | 2.70 | 16.66 | 11.31 | 55.80 | 36.07 | 16.59 | 23.40 | 23.32 | 16.86 |
| Kaithal | | | | | | | 47.38 | 37.96 | 39.98 | 20.92 | 21.02 | 13.55 |
| Karnal | | -9.48 | 3.52 | 2.79 | 16.71 | 36.60 | 34.19 | 30.50 | 33.96 | 24.76 | 23.06 | 18.14 |
| Panipat | | | | | | | 24.87 | 28.24 | 32.61 | 37.65 | 38.58 | 24.60 |
| Sonipat | | -13.73 | 7.81 | 4.48 | 18.38 | 13.82 | 26.51 | 24.31 | 23.46 | 24.53 | 22.39 | 13.35 |
| Jind | | | | | | | 32.92 | 36.16 | 25.21 | 23.03 | 21.36 | 12.13 |
| Fatehabad | | | | | | | 76.62 | 49.83 | 32.07 | 26.08 | 24.76 | 16.85 |
| Sirsa | | 3.37 | 1.61 | 9.97 | 11.93 | 3.63 | 67.51 | 43.96 | 32.51 | 27.79 | 23.59 | 15.99 |
| Hisar | | | | | | | 36.49 | 33.98 | 27.32 | 22.67 | 27.11 | 13.45 |
| Bhiwani | | | | | | | 28.92 | 30.38 | 30.72 | 22.80 | 22.49 | 14.70 |
| Rohtak | | -13.73 | 7.81 | 4.48 | 18.38 | 14.12 | 25.93 | 26.02 | 20.84 | 17.79 | 21.00 | 12.88 |
| Jhajjar | | -13.73 | 7.81 | 4.48 | 18.38 | 16.50 | 27.15 | 27.79 | 22.89 | 21.37 | 23.06 | 8.90 |
| Mahendragarh | | | | | | | 22.62 | 24.62 | 25.79 | 27.91 | 19.16 | 13.48 |
| Rewari | | | | | | | 21.15 | 24.00 | 24.52 | 25.62 | 25.34 | 17.64 |
| Gurgaon | | -12.80 | -6.85 | 9.31 | 14.96 | 8.01 | 28.72 | 34.08 | 35.49 | 28.64 | 44.15 | 73.14 |
| Mewat | | -12.80 | -6.85 | 9.31 | 14.96 | 8.01 | 29.59 | 33.97 | 22.30 | 37.52 | 45.67 | 38.65 |
| Faridabad | | -12.80 | -6.85 | 9.31 | 14.96 | 8.01 | 39.93 | 79.63 | 60.25 | 66.04 | 58.88 | 32.54 |
| Palwal | | -12.80 | -6.85 | 9.31 | 14.96 | 8.01 | 28.15 | 30.40 | 23.29 | 31.87 | 34.21 | 25.76 |

Source: General Population Table, 2011 (A2 Table)

Table 3: Million plus population of the Town in Haryana in during 1991 to 2011

| District | Town | Total Population | | | Growth rate (%) | | Sex ratio | |
|-------------|---------------------|------------------|--------|--------|-----------------|--------------|-----------|------|
| | | 2011 | 2001 | 1991 | 2001 to 2011 | 1991 to 2001 | 2011 | 2001 |
| Gurgaon | Gurgaon (M Cor.+OG) | 886519 | 239446 | 142651 | 270.24 | 67.85 | 847 | 847 |
| Rohtak | Rohtak (M CI) | 374292 | 294577 | 216096 | 27.06 | 36.32 | 888 | 861 |
| Hisar | Hisar (M CI+OG) | 307024 | 263186 | 181255 | 16.66 | 45.20 | 844 | 830 |
| Karnal | Karnal (M CI+OG) | 302140 | 221236 | 176131 | 36.57 | 25.61 | 892 | 877 |
| Panipat | Panipat (M CI+OG) | 295970 | 354148 | 191212 | -16.43 | 85.21 | 872 | 818 |
| Panchkula | Panchkula (M CI) | 211355 | 140925 | 70375 | 49.98 | 100.25 | 932 | 857 |
| Bhiwani | Bhiwani (M CI) | 196057 | 169531 | 121629 | 15.65 | 39.38 | 902 | 849 |
| Ambala | Ambala (M CI) | 195153 | 139279 | 119338 | 40.12 | 16.71 | 897 | 882 |
| Sirsa | Sirsa (M CI) | 182534 | 160735 | 112841 | 13.56 | 42.44 | 897 | 869 |
| Jhajjar | Bahadurgarh (M CI) | 170767 | 131925 | 57235 | 29.44 | 130.50 | 992 | 810 |
| Jind | Jind (M CI) | 167592 | 135855 | 85315 | 23.36 | 59.24 | 949 | 851 |
| Kurukashtra | Thanesar (M CI) | 155152 | 122319 | 81255 | 26.84 | 50.54 | 905 | 826 |
| Kaithal | Kaithal (M CI) | 144915 | 117285 | 71142 | 23.56 | 64.86 | 1042 | 859 |
| Rewari | Rewari (M CI) | 143021 | 105138 | 75342 | 36.03 | 39.55 | 893 | 866 |
| Palwal | Palwal (M CI+OG) | 131926 | 100722 | 59168 | 30.98 | 70.23 | 926 | 877 |

Source: Census of India, 2011 (City population)

Note- M.Cor- Municipal Corporation, OG- outgrowth, M.CI- Municipal Council

Table 4: Birth rate by district in Haryana during 1996 to 2011 (in post reform period)

| Districts | CRUDE BIRTH RATE (per 1000 mid year population) | | | | | | | | | | | | | | | |
|-----------------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| HARYANA | 20.8 | 21.8 | 20.3 | 20.4 | 20.5 | 19.6 | 19.7 | 19.7 | 20.9 | 20.6 | 21.9 | 21.6 | 22.2 | 21.9 | 21.7 | 22.1 |
| Mewat | | | | | | 20.3 | | | | | 32.6 | 34.4 | 37.3 | 29.8 | 29.7 | 34.2 |
| Palwal | | | | | | | | | | | | | | 28.1 | 26.9 | 28.0 |
| Rohtak | 38.7 | 41.0 | 22.8 | 23.1 | 22.8 | 23.6 | 22.2 | 23.0 | 23.1 | 23.4 | 24.0 | 24.2 | 24.8 | 25.1 | 25.6 | 24.9 |
| Fatehabad | | | 16.4 | 17.5 | 17.5 | 18.5 | 18.2 | 18.3 | 20.0 | 22.4 | 25.1 | 25.2 | 25.5 | 25.0 | 24.8 | 24.2 |
| Panchkula | 20.1 | 19.5 | 18.9 | 19.6 | 18.0 | 17.7 | 16.9 | 18.2 | 18.8 | 20.9 | 22.4 | 22.0 | 24.0 | 23.8 | 23.9 | 24.1 |
| Faridabad | 19.6 | 28.6 | 18.2 | 17.5 | 18.4 | 27.4 | 26.3 | 26.8 | 30.2 | 31.1 | 30.3 | 31.8 | 34.2 | 22.3 | 22.1 | 23.5 |
| Panipat | 21.1 | 21.3 | 21.3 | 21.3 | 21.3 | 19.9 | 20.4 | 20.5 | 20.7 | 20.5 | 21.4 | 21.3 | 22.3 | 23.4 | 22.8 | 22.7 |
| Kurukshetra | 23.3 | 23.5 | 23.9 | 23.9 | 24.7 | 24.2 | 24.0 | 23.9 | 25.0 | 22.7 | 23.6 | 23.2 | 23.7 | 22.8 | 22.4 | 22.6 |
| Hisar | 29.5 | 30.2 | 19.2 | 19.4 | 18.8 | 18.6 | 19.4 | 19.1 | 19.9 | 21.1 | 22.9 | 22.4 | 22.3 | 22.5 | 22.7 | 22.6 |
| Gurgaon | 20.4 | 22.3 | 22.4 | 22.7 | 23.4 | 38.9 | 38.6 | 38.6 | 41.8 | 42.2 | 22.5 | 21.9 | 23.1 | 22.3 | 22.0 | 22.4 |
| Kaithal | 18.3 | 20.2 | 18.7 | 18.9 | 21.3 | 20.5 | 20.9 | 20.7 | 21.2 | 20.4 | 21.3 | 21.6 | 22.3 | 21.1 | 21.0 | 22.1 |
| Rewari | 24.2 | 24.2 | 23.5 | 23.1 | 22.9 | 21.6 | 23.9 | 22.6 | 23.3 | 19.1 | 22.7 | 22.5 | 22.7 | 22.4 | 22.1 | 21.6 |
| Karnal | 20.4 | 21.0 | 21.1 | 20.5 | 20.6 | 19.4 | 20.1 | 20.4 | 21.4 | 20.5 | 21.7 | 20.9 | 21.5 | 21.3 | 21.6 | 21.3 |
| Sonipat | 19.9 | 20.3 | 18.8 | 20.1 | 20.5 | 19.6 | 18.9 | 19.3 | 20.2 | 20.5 | 21.1 | 20.1 | 21.1 | 20.6 | 20.2 | 20.3 |
| Sirsa | 18.6 | 15.7 | 17.6 | 17.1 | 17.0 | 16.8 | 17.6 | 18.1 | 19.3 | 19.7 | 21.3 | 21.5 | 21.5 | 20.5 | 21.0 | 20.3 |
| Jind | 20.3 | 21.9 | 20.7 | 20.4 | 20.8 | 19.6 | 20.0 | 20.9 | 21.0 | 20.1 | 21.4 | 20.5 | 20.4 | 20.1 | 19.5 | 19.9 |
| Ambala | 23.6 | 22.3 | 22.1 | 22.3 | 22.4 | 22.0 | 19.7 | 20.0 | 23.1 | 23.1 | 21.5 | 20.4 | 19.8 | 19.2 | 19.1 | 19.0 |
| Yamunanagar | 24.9 | 23.3 | 23.1 | 22.8 | 22.2 | 20.6 | 20.6 | 19.9 | 19.9 | 19.1 | 19.8 | 19.5 | 19.6 | 19.0 | 19.1 | 19.0 |
| Bhiwani | 21.7 | 20.4 | 19.8 | 20.1 | 19.4 | 18.9 | 20.5 | 19.3 | 21.2 | 20.2 | 21.9 | 20.7 | 20.7 | 20.1 | 19.3 | 19.0 |
| Narnaul(Mahendragarh) | 23.6 | 22.6 | | | | | | 20.7 | 19.6 | 21.8 | 19.5 | 20.2 | 19.2 | 19.3 | 18.6 | 18.4 |
| Jhajjar | | | 18.0 | 17.3 | 18.3 | 17.3 | 16.6 | 17.3 | 18.7 | 16.0 | 16.4 | 15.5 | 15.7 | 15.5 | 15.3 | 16.5 |

Source: Registrar General of India, Vital statistics reports from different years , 1996 to 2011

It has been observing that fast urbanization is occurring after economic liberalization. Population structures in both rural and urban areas are varying which is altering labour market at both places. It is well known that natural growth rate of population in urban areas is lower than rural areas over the period of time. Table 3 indicates highest population growth rate was recorded in Gurgaon by nearly 270 percent during 2001 to 2011 while it has increased by about 68 percent during previous census, 1991 to 2001. Only Panipat district has reported negative growth rate during 2001 to 2011 but this district has reported growth rate by 85 percent in million plus populated town in Haryana. Sex ratio in all the million plus town is not satisfactory or lower than national level, but 2011 census has shown that it has slightly improved in sex ratio.

2: Vital events in the State

Population growth can be determined by natural growth and socio-economic process. Birth and death are the best determinants of natural growth rate while migration is the determinant of socio-economic growth of population. Table 4 shows that crude birth rate (CBR) in Haryana was 20.8 per 1000 population in 1996 while in 2011 it has increased by 22.1. Mewat district has reported highest CBR 34.2/ 1000 population. It may be because of the advancement of medical institutions and birth registration has not missed as most of the districts have not registered vital statistics.

Birth registration is not uniformly distributed in all the regions and it is also varying in village to village all parts of the India. Table 4 also shows that lowest birth has registered in Jhajjar and Narnaul (Mahendragarh) in 2011. Due to various reasons registration of vital events in India under reported and it is true in case in rural areas. James *et al.*, (2015) have stated that in Rajasthan registration of vital events are very low in across the districts. It has also reported that male death registration is higher than female death registration due to the social and economic cause. It seems that transfer of property is the main cause of higher and lower registration of death of male and female respectively in Indian states. Table 4 also indicates crude death rate (CDR) since 1996 to 2011. CDR in Haryana in 1996 was 5.8 per 1000 midyear population and it has slightly increased by 6/1000. Rohtak district has recorded highest CDR over the period. It does not mean that highest mortality was in Rohtak district but it may be because of better registration of vital events in this district. Eight Districts such as Rohtak, Hisar, Ambala, Yamunanagar, Kaithal, Karnal, Sirsa and Jind have recorded CDR more than state level 6 and rest districts have reported less than the state level. It reveals that in 2011, 6 persons have died in 1000 population. It indicates that registration of vital statistics in above eight districts were better. Mewat and Faridabad districts have reported lowest CDR even both districts are well developed in terms of all the parameters of development in the State and it may be due to fast urbanization and improved health practices. It is scientifically proved that male natural mortality is higher than female mortality, but child sex ratio is lower which indicates that sex selective abortion or ignorance of treatment of girls. Next section has covered all the aspects of sex ratio in Haryana.

3: Age-Sex Population Structure and Sex Ratio

Working age population can be measured by age sex distribution in all the regions. It has seen that child birth registration is higher than child death rate in all parts of the nation. One can observed in Table 5 sex ratio at Birth (SRB) in Haryana is lower than national average (940). Socio-economic development cannot be completed without study the sex ratio at the

Table 5: Sex Ratio at Birth in Haryana by district during 2002 to 2011 per 1000 live births

| District | Sex Ratio at Birth/ 1000 male | | | | | | | | | |
|-----------------------|-------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| HARYANA | 829 | 814 | 796 | 827 | 857 | 860 | 854 | 853 | 838 | 833 |
| Mewat | | | | | 866 | 863 | 885 | 888 | 901 | 918 |
| Palwal | | | | | | | | 919 | 895 | 885 |
| Faridabad | 816 | 833 | 798 | 870 | 869 | 874 | 886 | 903 | 867 | 877 |
| Panchkula | 874 | 870 | 896 | 861 | 887 | 898 | 881 | 867 | 872 | 876 |
| Sirsa | 835 | 909 | 886 | 858 | 891 | 897 | 905 | 884 | 874 | 863 |
| Bhiwani | 827 | 806 | 765 | 814 | 861 | 895 | 868 | 863 | 837 | 854 |
| Gurgaon | 828 | 757 | 788 | 835 | 826 | 853 | 839 | 859 | 841 | 850 |
| Fatehabad | 856 | 878 | 840 | 869 | 891 | 869 | 885 | 885 | 858 | 846 |
| Hisar | 866 | 835 | 782 | 832 | 902 | 907 | 874 | 874 | 855 | 845 |
| Jind | 838 | 814 | 783 | 856 | 889 | 896 | 894 | 861 | 870 | 842 |
| Panipat | 859 | 827 | 832 | 870 | 867 | 868 | 861 | 836 | 865 | 822 |
| Ambala | 851 | 818 | 800 | 790 | 809 | 815 | 819 | 829 | 796 | 819 |
| Jhajjar | 811 | 733 | 743 | 790 | 797 | 831 | 803 | 825 | 805 | 815 |
| Rohtak | 780 | 822 | 792 | 830 | 867 | 843 | 853 | 822 | 804 | 813 |
| Karnal | 846 | 822 | 791 | 813 | 863 | 879 | 837 | 836 | 819 | 809 |
| Kaithal | 813 | 804 | 806 | 833 | 892 | 867 | 835 | 847 | 828 | 806 |
| Yamunanagar | 846 | 845 | 829 | 829 | 876 | 855 | 826 | 824 | 827 | 801 |
| Sonipat | 780 | 763 | 759 | 789 | 831 | 810 | 840 | 821 | 802 | 782 |
| Rewari | 847 | 825 | 771 | 771 | 797 | 804 | 781 | 781 | 767 | 780 |
| Kurukshetra | 850 | 817 | 802 | 779 | 804 | 823 | 800 | 810 | 765 | 751 |
| Narnaul(Mahendragarh) | 766 | 764 | 755 | 773 | 785 | 768 | 793 | 789 | 773 | 737 |

Source: Registrar General of India, Vital statistics reports from different years

Table 6: Infant Mortality rate in Haryana by district in Haryana during 2002-2011

| District | Infant Mortality Rate per Lakh live birth | | | | | | | | | |
|-----------------------|---|------------|------------|------------|------------|------------|-------------|------------|-------------|-------------|
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| HARYANA | 9.8 | 9.3 | 9.1 | 8.7 | 8.0 | 9.9 | 10.6 | 9.9 | 10.6 | 12.2 |
| Rohtak | 28.7 | 25.7 | 21.3 | 25.2 | 21.8 | 28.2 | 35.1 | 39.4 | 35.1 | 31.7 |
| Mewat | | | | | 12.7 | 14.4 | 13.2 | 9.2 | 10.7 | 16.2 |
| Hisar | 8.7 | 6.3 | 7.4 | 9.8 | 13.0 | 9.7 | 12.1 | 11.4 | 13.2 | 15.0 |
| Faridabad | 8.7 | 7.5 | 7.9 | 7.9 | 4.1 | 7.4 | 7.0 | 9.1 | 10.7 | 14.8 |
| Jind | 6.2 | 7.3 | 11.6 | 8.2 | 7.5 | 12.9 | 16.6 | 13.6 | 14.4 | 14.0 |
| Palwal | | | | | | | | 6.7 | 13.4 | 13.2 |
| Bhiwani | 16.2 | 14.9 | 13.0 | 13.4 | 9.5 | 9.7 | 9.6 | 8.7 | 9.0 | 13.1 |
| Yamunanagar | 16.4 | 9.3 | 10.7 | 10.6 | 10.2 | 11.3 | 13.5 | 11.6 | 12.3 | 12.7 |
| Kaithal | 5.2 | 7.1 | 9.3 | 4.5 | 5.2 | 4.2 | 7.9 | 7.2 | 8.9 | 12.0 |
| Fatehabad | 8.7 | 8.7 | 6.5 | 7.4 | 7.0 | 13.4 | 9.0 | 9.7 | 10.2 | 11.6 |
| Karnal | 9.8 | 10.4 | 9.3 | 7.6 | 9.2 | 11.0 | 11.8 | 9.1 | 7.1 | 11.3 |
| Sirsa | 7.2 | 6.5 | 7.6 | 5.7 | 6.2 | 8.3 | 7.7 | 6.3 | 8.3 | 11.2 |
| Rewari | 8.5 | 7.2 | 7.1 | 8.5 | 4.1 | 6.0 | 8.7 | 9.4 | 9.4 | 10.0 |
| Panipat | 5.9 | 7.8 | 7.8 | 4.4 | 2.9 | 5.2 | 6.3 | 4.6 | 5.5 | 8.6 |
| Kurukshetra | 4.3 | 8.2 | 10.4 | 5.5 | 8.2 | 7.0 | 8.2 | 9.3 | 9.2 | 8.6 |
| Ambala | 8.1 | 10.3 | 6.7 | 6.2 | 7.7 | 9.4 | 9.4 | 6.8 | 8.4 | 8.5 |
| Narnaul(Mahendragarh) | 6.3 | 6.3 | 7.5 | 12.2 | 8.5 | 8.1 | 10.2 | 8.8 | 8.9 | 8.2 |
| Sonipat | 10.8 | 7.3 | 6.7 | 3.8 | 5.4 | 7.5 | 5.7 | 5.7 | 6.4 | 6.9 |
| Panchkula | 7.0 | 7.7 | 6.4 | 4.4 | 4.8 | 8.6 | 8.0 | 8.2 | 7.2 | 6.5 |
| Gurgaon | 8.9 | 9.9 | 7.7 | 10.5 | 3.1 | 5.4 | 4.7 | 5.2 | 5.1 | 5.8 |
| Jhajjar | 3.9 | 4.1 | 5.9 | 4.1 | 5.0 | 7.2 | 7.0 | 5.6 | 4.8 | 5.3 |

Source: Registrar General of India, Vital statistics reports from different years

locality. Mewat, Palwal, Faridabad, Panchkula, Sirsa, Bhiwani, Gurgaon, Fatehabad, Hisar and Jind districts have reported SRB higher than state average (833 female/1000 male) in

2011. Other districts have reported lower SRB than state average. it has found that Haryana has improved SRB in 2002 to 2011.

Sex ratio at birth has improved due to female education status in India but not as expected (UNFPA, 2016). As per UNFPA estimates, SRB was 124.4 male per 100 female in 1998 while it has declined by 120.6 and 116.7 male/100 female in 2004 and 2011 respectively. It has projected based on Sample Registration System (SRS) data about 109.9 male/100 female would be in 2025. It indicates that Haryana has not performing well to improve sex ratio at all the level either sex ratio at birth or general sex ratio. But interestingly, Madhya Pradesh (MP) and Uttar Pradesh (UP) have reported lower SRB during the same period in north India. In north zone of India (Haryana, Punjab, MP and UP), Haryana and Punjab are reporting bad female births and it has indicated that sex selective abortion due to son preference in these state.

Infant Mortality Rate (IMR) is the best indicator of the socio-economic status of the household and health infrastructure in the locality. Table 6 shows that in 2002, IMR of Haryana was 9.8 infant death/ lakh live births in the state while in 2011 it has reported increment of IMR by 12.2. Rohtak, Mewat, Hisar, Faridabad, Jind, Palwal, Bhiwani and Yamunanagar districts of Haryana have recorded IMR more than state average (12.2) as 31.7, 16.2, 15.0, 14.8, 14.0, 13.2, 13.1, and 12.7 infant deaths per lakh live births in 2011 respectively. Lowest IMR has recorded in Jhajjar districts followed by Gurgaon and Panchkulla. Infant mortality rate (IMR) and Child death rate are the best determinant of socio-economic development in the region. Sex ratio is defined as the number of females/1000 males in the population in India, whereas in almost all the United Nations publications or International publications, it is articulated as males/100 females. During the post-Independence period from 1951 to 2011, sex ratio in rural India has decreased from 965 to 946 and increased from 860 to 929 in urban India. At all India level, the sex ratio has decreased from 946 in 1951 to 943 in 2011 (MOSPI, 2011).

Table 7: Decadal Sex Ratio in different districts of Haryana since 1901 to 2011

| District | 1901 | 1911 | 1921 | 1931 | 1941 | 1951 | 1961 | 1971 | 1981 | 1991 | 2001 | 2011 |
|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| HARYANA | 867 | 835 | 844 | 844 | 869 | 871 | 868 | 867 | 870 | 865 | 861 | 879 |
| Mewat | 905 | 878 | 858 | 859 | 880 | 892 | 902 | 885 | 884 | 871 | 899 | 907 |
| Fatehabad | | | | | | 853 | 852 | 870 | 881 | 877 | 884 | 902 |
| Rewari | | | | | | 930 | 926 | 927 | 926 | 927 | 899 | 898 |
| Sirsa | 871 | 837 | 877 | 855 | 878 | 843 | 845 | 865 | 877 | 885 | 882 | 897 |
| Mahendragarh | | | | | | 972 | 961 | 910 | 939 | 910 | 918 | 895 |
| Kurukshetra | 844 | 826 | 827 | 815 | 832 | 858 | 853 | 859 | 872 | 879 | 866 | 888 |
| Karnal | 845 | 828 | 828 | 815 | 833 | 860 | 853 | 856 | 856 | 864 | 865 | 887 |
| Bhiwani | | | | | | 880 | 880 | 878 | 897 | 878 | 879 | 886 |
| Ambala | 806 | 753 | 776 | 785 | 797 | 807 | 828 | 882 | 902 | 903 | 868 | 885 |
| Kaithal | | | | | | 849 | 837 | 843 | 848 | 853 | 853 | 881 |
| Palwal | 905 | 878 | 858 | 859 | 880 | 855 | 857 | 847 | 849 | 846 | 862 | 880 |
| Yamunanagar | 811 | 762 | 783 | 789 | 802 | 841 | 836 | 848 | 855 | 883 | 862 | 877 |
| Panchkula | 806 | 753 | 776 | 785 | 797 | 799 | 805 | 820 | 833 | 839 | 823 | 873 |
| Faridabad | 905 | 878 | 858 | 859 | 880 | 852 | 835 | 768 | 779 | 815 | 826 | 873 |
| Hisar | | | | | | 871 | 866 | 859 | 859 | 853 | 851 | 872 |
| Jind | | | | | | 849 | 857 | 860 | 857 | 838 | 852 | 871 |
| Rohtak | 881 | 856 | 852 | 864 | 915 | 883 | 885 | 878 | 869 | 849 | 847 | 867 |
| Panipat | | | | | | 866 | 857 | 852 | 849 | 852 | 829 | 864 |
| Jhajjar | 881 | 856 | 852 | 864 | 915 | 911 | 902 | 903 | 891 | 861 | 847 | 862 |
| Sonipat | 881 | 856 | 852 | 864 | 915 | 886 | 886 | 867 | 866 | 840 | 839 | 856 |
| Gurgaon | 905 | 878 | 858 | 859 | 880 | 898 | 880 | 887 | 878 | 871 | 850 | 854 |

Source: *Census of India*, General Population Table, 2011 (A2 Table)

Haryana has not improved its sex ratio over more than 100 years. There is big gap in male and female population in the state which is very low at the national. In 1901, the sex ratio was 867 and after 120 years it has increased by 879 female per 1000 male. It is showing that 121 female populations are lower than its male counterpart in 2011 (Table 7). Mewat and Fatehabad districts have reported highest sex ratio in the Haryana 907 and 902 female per 1000 male which also lower than national average 943 in 2011. Table 7 further focused that Gurgaon has reported lowest sex ratio in 2011 followed Sonipat. Sex ratio is the best indicator of social and economical development and psychological state of mind. It determined by sex preference and gender equality and gender empowerment in the locality. According to World Health Organization (WHO), natural sex ratio is nearly 1050 male per 1000 female population which indicates that births of girls are lower than boys by natural phenomenon. WHO also stated that nature provides that the number of infant males somewhat outnumber infant females because as they grow up, men are at a higher risk of dying than women not only due to sex differentials in natural death rates, but also due to higher risk from external causes (accidents, injuries, violence, war casualties).

Demographic dividend occurs when the proportion of working age population (15 to 60 years in India and 15 to 65 at world level) in the total population is high and this depicts that more people have the potential to be economic productive and they contribute to growth of the economy of any geographic area. According to UNFPA, Demographic dividend refers the economic growth potential when economic working age population is greater than dependent population in the area. It is called as demographic gift to the nation or locality. If fertility is low and working age population is higher than younger age population. Resultant of this, economic growth is higher, and in this situation, younger age population have access to better/quality education, sufficient nutrition, health and sex and reproductive health.

Dependency ratio in Haryana has declined after post reform period. By definition, dependency ratio is lower than actual dependency ratio among the labour force participation. It has found that most of the workers left behind number of non workers in the households. These non workers may be female, older, younger, children and disabled population. It is well known that disabled population are dependent in many terms. As humanitarian ground the government have provided various schemes for disabled/dependent population.

5. Conclusion

Demographic changes are continuous natural and socio-economic process. This process is not uniform at all the geographical locations and among every social groups and religion. It has observed that Haryana has witnessed lowest sex ratio since 1901 to 2011. After post reform period the situation of sex ratio has not changed as fast as socio-economic changes occur in the state. Population growth rate has also declined over the period of time in post reform period. Fertility rate decline and dependency ratio has been declining in post reform period in the state.

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