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# Trends of Demographic Development of BIMARU States in India

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## Abstract

The objective of demographic development in an economy is to increase the standard of living of the persons. The demographic indicators include demographic change, woman empowerment and health development. In this study 8 variables of demographic development are considered and on the basis of these indicators the gap of demographic development amongst the states is estimated.

**Keywords: -** Demographic Development Index, BIMARU States, Life expectancy, Morality rate.

## Introduction

BIMARU is an acronym formed from the first letters of the names of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh states in India. It was coined by Ashish Bose in the mid-1980s. BIMARU has a resemblance to a Hindi word "Bimar" which means sick. This was used to refer to the poor demographic conditions within those states. Several studies, including those by the UN, showed that the performances of the BIMARU states were dragging down the GDP growth rate of India. Some of these states are also a part of Red Corridor. Since some of these states have now started to advance faster than some of the developed states, the concept of BIMARU is starting to become outdated.

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In recent time some of these states have seen real push in terms of demographic development and economic growth. Although, some of these states have experienced high growth rates, they still lag other more progressive states. Bihar's GSDP grew by 18% over the period 2006-07, which was higher than in the past 10 years and one of the highest recorded by the Government of India for that period. Its economy has also grown bigger than that of Punjab. People from Bihar, Uttar Pradesh contribute significantly to ARMY, C.I.S.F., B.S.F., N.S.G., I.A.F. and many other Para Military forces. Recently these states are working for their improvement by developing infrastructures, IT-parks and giving a better invitation to the businessmen for investment. Also Madhya Pradesh enlisted at 2nd position in U.N.O. GDP development ranking's with a record of 22.5 percent.

These four states include about 30 percent of the geographical area of India and 36.71 percent of the population of the country (census 2011). When these states were given this acronym of BIMARU states, the states of Chhattisgarh, Jharkhand and Uttrakhand were included in these states having 8.16 percent of total area and 5.68 percent of total population of India.

## Objectives

The major objectives of this research paper is-

1. To examine the demographic Status of BIMARU states in India.
2. To compute demographic development index and ranking of selected 17 major Indian states.
3. To discus on demographic development index and ranks of BIMARU states from census 1981 to census 2011.

## Survey of Literature

There are several studies examining the demographic development disparity between Indian states. These studies suggest that demographic development effected to living of standard and economic growth [Bose, Ashish 1996; Bose, Ashish 2007; Sam and Mishra 2014;

Sharma, Vinita 2015]. These are all study focused on demographic development analysis and status of BIMARU states in Indian economy.

## Data and Methodology

The study is mainly based on the secondary data. The sources of data are the publications of Indian census 2011, and publications of some other institutions. In this study we selected 8 demographic indicators for analysis of BIMARU states. These indicators are Decadal Growth Rate of Population, Literacy Rate, Sex Ratio, Birth Rate, Death Rate, Infant Mortality Rate, Life Expectancy and Percentage of Working Population. We have tried to collect the data for the period from 1981 to 2011.

## Methodology

Different kinds of demographics indicators combined together affect the development of an economy. These indicators are mutually interdependent, hence, it is not appropriate to take one of the indicators and analyse its effect on development. There is need to compute a "Composite Index of demographic development" by integrating various components in a suitable manner.

The preceding description shows that there is no unanimity regarding the methodologies used to compute the infrastructure development index. On the basis of 8 variables the Index number of demographics development is prepared which includes decadal growth rate of population, literacy rate, sex ratio, birth rate, death rate, infant mortality rate, life expectancy and percentage of working population. Here an attempt is made to devise a method quite analogous to the one proposed by Morris and Liser (1977) and used by Mukherjee (1980), and Patra and Acharya (2011). Under this procedure demographic development index is computed as a weighted average of various components of demographic indicators from a multivariate data set where the weight is same 0.125. The detailed methodology runs as follow:

Let $X_{ij}$ represent the value of the $i^{th}$ infrastructural development indicator in $j^{th}$ state, (i = 1, 2, 3 ……., 10; j = 1, 2, 3 ……., 16). Let us write:-

$$Y_{ij} = \frac{X_{ij} - Min_j X_{ij}}{Max_j X_{ij} - Min_j X_{ij}} \quad \ldots\ldots\ldots\ldots\ldots (1)$$

Where, $Min_j X_{ij}$ and $Max_j X_{ij}$ are the minimum and maximum of $X_{ij}$ respectively. However, if $X_{ij}$ is negatively associated with the status of infrastructural development, equation (1) can be written as:

$$Y_{ij} = \frac{Max_j X_{ij} - X_{ij}}{Max_j X_{ij} - Min_j X_{ij}} \quad \ldots\ldots\ldots\ldots\ldots (2)$$

Obviously, the scaled values, $Y_{ij,}$ vary from zero to one. The transformation employed here has a meaning of development, which is always a relative concept.

## Analysis and Discussion

Out of the 17 states which we considered the highest DDI during 1981 was Kerala (0.870) and Tamil Nadu (0.647) and lowest was for Uttar Pradesh (0.082). The second and third lowest was for Rajasthan (0.218) and Madhya Pradesh (0.253). During 1991 the DDI for Madhya Pradesh even become worst as at stood 0.185 but Uttar Pradesh again lowest in the DDI ranks. However, there was improvement in the DDI of Uttar Pradesh (from 0.082 to 0.147) and Rajasthan (from 0.218 to 0.279). However, DDI of Bihar in 1991 also increased to 0.283 from 0.265 in 1981. It is heartening to note that DDI of Uttar Pradesh and Bihar declined from 0.147 to 0.113 and from 0.283 to 0.200 during 2001. Of course during 2001 the DDI of Rajasthan marginally increased from 0.279 to 0.282. However, there was no change in Rank in between 1991-2001 of Rajasthan. This remained 14 in both these period. But during 2011 whereas DDI in case of Bihar is increased slightly from 0.200 to 0.204, the DDI of Rajasthan improved very significantly from 0.282 in 2001 to 0.394 during 2011 and its ranked 9 amongst all the 17 states taken into consideration. There is significant improvement in rank also from 14 to 9. But so far Madhya Pradesh is concerned its DDI has improved from 0.218 to 0.252 (in 2011) and its rank increased from 15 to 14. Similarly in case of Uttar Pradesh its DDI mower increased significantly from 0.113 to 0.190 in 2011 but its rank has remained status quo is 17. The DDI in case of Bihar

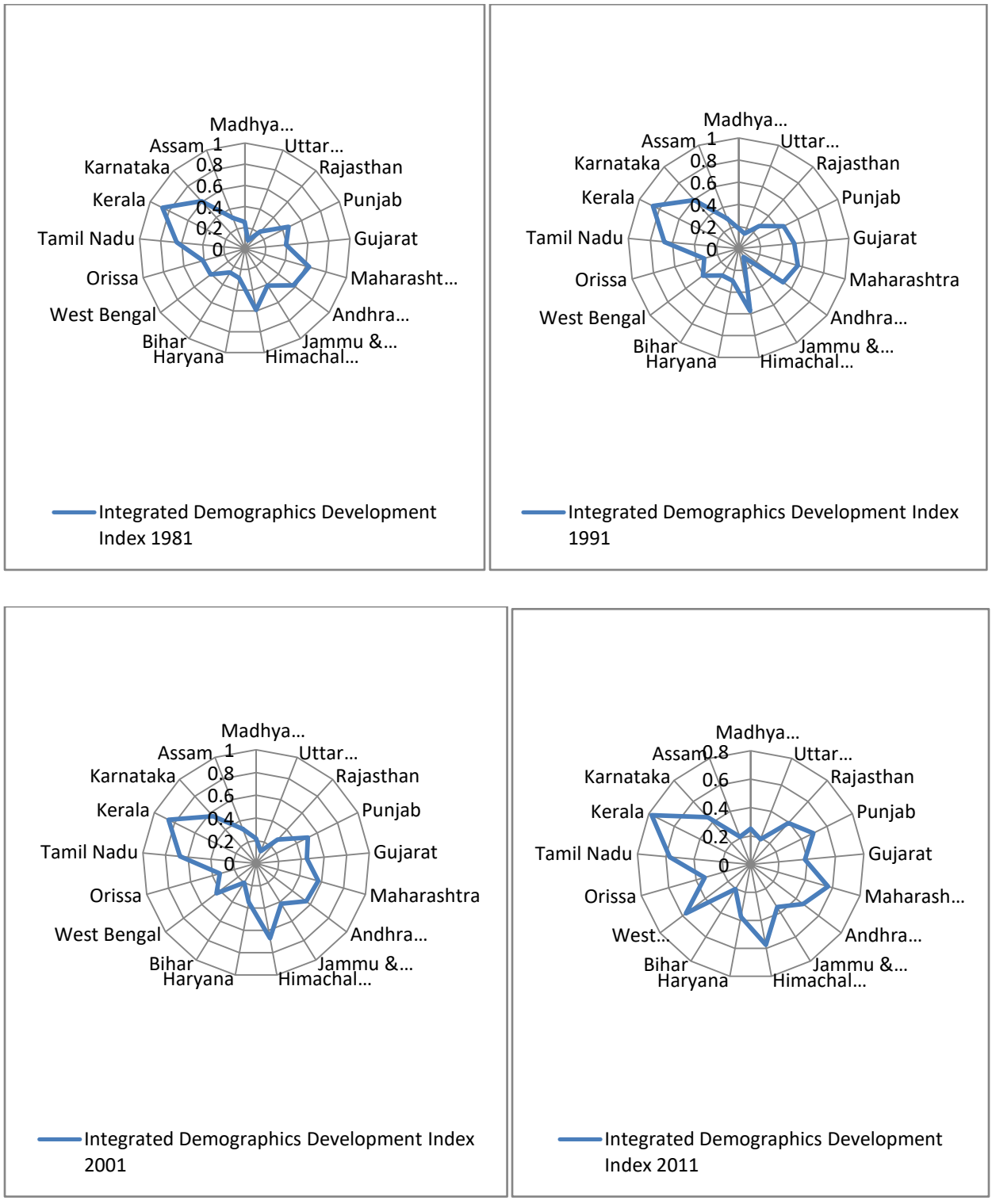
improved from 0.200 to 0.204 from 2001 to 2011 and the rank during 2011 remained 16. [See table – 1 and Chart- 1 ]

**Table - 1 Integrated Demographics Development Index and Rank of BIMARU States in India**

| S. No. | States | 1981 | | 1991 | | 2001 | | 2011 | |
|---|---|---|---|---|---|---|---|---|---|
| | | DDI | Ranks | DDI | Ranks | DDI | Ranks | DDI | Ranks |
| 1 | Madhya Pradesh | 0.253 | 14 | 0.185 | 15 | 0.218 | 15 | 0.252 | 14 |
| 2 | Uttar Pradesh | 0.082 | 16 | 0.147 | 16 | 0.113 | 17 | 0.190 | 17 |
| 3 | Rajasthan | 0.218 | 15 | 0.279 | 14 | 0.282 | 14 | 0.394 | 9 |
| 4 | Punjab | 0.463 | 7 | 0.455 | 8 | 0.510 | 7 | 0.492 | 6 |
| 5 | Gujarat | 0.392 | 11 | 0.505 | 6 | 0.448 | 8 | 0.382 | 10 |
| 6 | Maharashtra | 0.634 | 3 | 0.557 | 5 | 0.569 | 4 | 0.565 | 5 |
| 7 | Andhra Pradesh | 0.579 | 6 | 0.504 | 7 | 0.555 | 6 | 0.461 | 7 |
| 8 | Jammu & Kashmir | 0.411 | 9 | 0.086 | * | 0.419 | 10 | 0.353 | 12 |
| 9 | Himachal Pradesh | 0.591 | 5 | 0.572 | 4 | 0.671 | 3 | 0.575 | 2 |
| 10 | Haryana | 0.284 | 12 | 0.294 | 11 | 0.349 | 11 | 0.375 | 11 |
| 11 | Bihar | 0.265 | 13 | 0.283 | 13 | 0.200 | 16 | 0.204 | 16 |
| 12 | West Bengal | 0.405 | 10 | 0.405 | 9 | 0.437 | 9 | 0.571 | 4 |
| 13 | Orissa | 0.412 | 8 | 0.324 | 10 | 0.333 | 12 | 0.336 | 13 |
| 14 | Tamil Nadu | 0.647 | 2 | 0.673 | 2 | 0.673 | 2 | 0.573 | 3 |
| 15 | Kerala | 0.870 | 1 | 0.865 | 1 | 0.861 | 1 | 0.778 | 1 |
| 16 | Karnataka | 0.608 | 4 | 0.594 | 3 | 0.561 | 5 | 0.449 | 8 |
| 17 | Assam | 0.313 | * | 0.294 | 11 | 0.325 | 13 | 0.210 | 15 |

Source : calculated

**Chart-1** Status of BIMARU States in Major 17 Indian States in demographic development




Source – table no. 1

**Conclusion**

We can conclude on the basis of DDI that Rajasthan is almost coming out of BIMARU states, as in DDI has continuously increased from 0.218 in 1981 to 0.279 in 1991 and farther to 0.282 in 2001 and finally to 0.394 in 2011. Similarly in rank has improved from 15 in 1981 to 9 in 2011. On the basis of DDI ranking of the states on the same ground, it is noted that whereas out of four states, Rajasthan is coming out of this BIMARU status while the reaming three states is not able to improve their status.

**References**


- Bose, Ashish (1996). Demographic transition and demographic imbalance in India. Health Transition Review, 6, 89-99.
- Bose, Ashish (2007). Beyond Populations: Growing North – South Disparity. Economic & Political Weekly, April 14, 58-63.
- Sharma, Vinita (2015). Are BIMARU States Still Bimaru?. Economic & Political Weekly, 18, 58-63.
- Som, K.S. and Mishra, R.P. (2014). BIMARU States: Need a Rethinking. Journal of Humanities And Social Science, 19(7), 34-41.

**Appendix - 1 Indicators of Demographics Development Index and Rank of BIMARU States in India**

| S. No. | States | Decadal Growth Rate of Population (in %) (1) | | | | Literacy Rate (in %) (2) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1981 | 1991 | 2001 | 2011 | 1981 | 1991 | 2001 | 2011 |
| 1 | Madhya Pradesh | 27.16 | 27.24 | 24.3 | 20.3 | 38.63 | 44.7 | 63.74 | 70.6 |
| 2 | Uttar Pradesh | 25.39 | 25.55 | 25.8 | 20.1 | 32.65 | 40.7 | 56.27 | 69.7 |
| 3 | Rajasthan | 32.97 | 28.44 | 28.3 | 21.4 | 30.11 | 38.6 | 60.41 | 67.1 |
| 4 | Punjab | 23.89 | 20.81 | 19.8 | 13.7 | 43.37 | 58.5 | 69.65 | 76.7 |
| 5 | Gujarat | 27.67 | 21.19 | 22.63 | 19.2 | 44.92 | 61.3 | 69.14 | 79.3 |
| 6 | Maharashtra | 24.54 | 25.73 | 22.6 | 16 | 57.24 | 64.9 | 76.88 | 82.9 |
| 7 | Andhra Pradesh | 23.10 | 24.2 | 13.9 | 11.1 | 35.66 | 44.1 | 60.47 | 67.7 |
| 8 | Jammu & Kashmir | 29.69 | 30.34 | 29 | 23.7 | 30.64 | * | 55.52 | 68.7 |
| 9 | Himachal Pradesh | 23.71 | 20.79 | 17.53 | 12.8 | 42.48 | 63.9 | 76.48 | 83.8 |
| 10 | Haryana | 28.75 | 27.41 | 28.06 | 19.9 | 37.13 | 55.9 | 67.91 | 76.6 |
| 11 | Bihar | 24.16 | 23.38 | 28.43 | 25.1 | 32.32 | 37.5 | 47 | 63.8 |
| 12 | West Bengal | 23.17 | 24.73 | 17.8 | 13.9 | 48.65 | 57.7 | 68.64 | 77.1 |
| 13 | Orissa | 20.17 | 20.06 | 15.9 | 14 | 33.62 | 49.1 | 63.08 | 73.5 |
| 14 | Tamil Nadu | 17.5 | 15.39 | 11.9 | 15.6 | 54.39 | 62.7 | 73.45 | 80.3 |
| 15 | Kerala | 19.24 | 14.32 | 9.42 | 4.86 | 78.85 | 89.8 | 90.86 | 93.9 |
| 16 | Karnataka | 26.75 | 12.12 | 17.25 | 15.7 | 46.21 | 56 | 66.64 | 75.6 |
| 17 | Assam | 23.36 | 24.24 | 18.9 | 16.9 | * | 52.9 | 63.25 | 73.2 |

Cont…

| Sex Ratio (3) | | | | Birth Rate (4) | | | | Death Rate (5) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1981** | **1991** | **2001** | **2011** | **1981** | **1991** | **2001** | **2011** | **1981** | **1991** | **2001** | **2011** |
| 921 | 912 | 920 | 930 | 37.6 | 36 | 31 | 15 | 17 | 14 | 10 | 8.3 |
| 882 | 876 | 898 | 908 | 39.6 | 36 | 32.1 | 16 | 16 | 11 | 10 | 8.1 |
| 919 | 910 | 922 | 926 | 37.1 | 35 | 31.1 | 12 | 14 | 10 | 8 | 6.7 |
| 879 | 882 | 874 | 893 | 30.3 | 28 | 21.2 | 14 | 9.4 | 7.8 | 7 | 7 |
| 942 | 934 | 921 | 918 | 34.5 | 28 | 25 | 20 | 12 | 8.5 | 7.8 | 6.7 |
| 937 | 934 | 922 | 925 | 28.5 | 26 | 20.7 | 16 | 9.6 | 8.2 | 7.5 | 6.5 |
| 975 | 972 | 978 | 992 | 31.7 | 26 | 21 | 17 | 11 | 9.7 | 8.2 | 7.6 |
| 892 | 896 | 900 | 883 | 31.6 | * | 20.2 | 18 | 9 | * | 6.1 | 5.7 |
| 973 | 976 | 970 | 974 | 31.5 | 29 | 21.2 | 19 | 12 | 8.9 | 7.1 | 6.9 |
| 870 | 865 | 861 | 877 | 36.5 | 33 | 26.8 | 14 | 11 | 8.2 | 7.6 | 6.6 |
| 948 | 907 | 921 | 916 | 39.1 | 31 | 31.2 | 19 | 14 | 9.8 | 8.2 | 6.8 |
| 911 | 917 | 934 | 947 | 33.2 | 27 | 20.6 | 12 | 11 | 8.3 | 7 | 6 |
| 981 | 971 | 972 | 978 | 33.1 | 29 | 23.5 | 15 | 13 | 13 | 10 | 8.6 |
| 977 | 974 | 986 | 995 | 28 | 21 | 19.1 | 15 | 12 | 8.8 | 7.7 | 7.6 |
| 1032 | 1036 | 1058 | 1084 | 25.6 | 18 | 17.3 | 16 | 6.6 | 6 | 6.6 | 7 |
| 963 | 960 | 964 | 968 | 28.3 | 27 | 22.2 | 21 | 9.1 | 9 | 7.6 | 7.1 |
| 910 | 923 | 932 | 954 | 33 | 31 | 27 | 22 | 13 | 12 | 9.6 | 8.2 |

Cont….

| Infant Mortality Rate (6) | | | | Life Expectancy (in years) (7) | | | | Percentage of Working population (8) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1981** | **1991** | **2001** | **2011** | **1981** | **1991** | **2001** | **2011** | **1981** | **1991** | **2001** | **2011** |
| 142 | 117 | 86 | 62 | 43.5 | 53.4 | 56.9 | 61 | 42.9 | 42.8 | 42.8 | 43.5 |
| 150 | 97 | 83 | 61 | 42 | 55.4 | 59.1 | 62.6 | 29.5 | 32.2 | 32.7 | 32.9 |
| 108 | 79 | 80 | 55 | 44.7 | 56.3 | 61.1 | 64.5 | 36.6 | 38.9 | 42.1 | 43.6 |
| 81 | 53 | 52 | 34 | 50.3 | 66.6 | 68.5 | 72.6 | 31.5 | 30.9 | 37.6 | 35.7 |
| 116 | 69 | 60 | 44 | 47.4 | 59.5 | 63.4 | 66.4 | 37.3 | 40.2 | 42.1 | 41 |
| 79 | 60 | 45 | 28 | 49.7 | 63.4 | 66.2 | 69.5 | 42.6 | 43 | 43.5 | 44 |
| 86 | 73 | 66 | 46 | 48.8 | 60.2 | 63.5 | 67 | 45.8 | 45.1 | 45.8 | 46.6 |
| 72 | 70 | 48 | 43 | * | * | 62.9 | 70.1 | 44.3 | * | 36.6 | 34.5 |
| 71 | 75 | 54 | 40 | 49.7 | 63.3 | 65.9 | 69.4 | 42.4 | 42.8 | 49.3 | 51.9 |
| 101 | 68 | 66 | 48 | 48.7 | 62.5 | 6.2 | 68.9 | 31.6 | 31 | 39.8 | 32.2 |
| 118 | 69 | 62 | 48 | 45.1 | 57.5 | 60.8 | 63 | 32.4 | 32.2 | 33.9 | 33.4 |
| 91 | 71 | 51 | 31 | 47.4 | 61.4 | 63.9 | 67.2 | 29.3 | 32.2 | 36.8 | 38.1 |
| 135 | 124 | 91 | 61 | 44.9 | 55.4 | 58.5 | 62.6 | 38 | 37.5 | 38.9 | 41.8 |
| 91 | 57 | 49 | 24 | 47.4 | 61.5 | 65.2 | 68.4 | 41.7 | 43.3 | 44.8 | 45.6 |
| 37 | 16 | 11 | 13 | 54.5 | 71.3 | 73.5 | 75.8 | 30.5 | 31.4 | 32.3 | 34.8 |
| 69 | 77 | 58 | 38 | 49.7 | 62.2 | 64.5 | 67.9 | 40.3 | 42 | 44.6 | 45.6 |
| 106 | 81 | 74 | 58 | 46.6 | 54.1 | 57.9 | 61.9 | * | 36.1 | 35.9 | 38.4 |

Source - Office of the Registrar General of India and Census Commissioner, Government of India.