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Population Growth in India in the Twenty-First Century- Huge Regional Imbalances Foreseen

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Abstract

During the second half of the last century, rapid population growth was a matter of serious concern in India as it was viewed as an impediment to the country's development. However, as India progressed well in demographic transition, fertility declined impressively and recent data show that India reached replacement fertility in 2017. Yet, population is bound increase further due to momentum of population growth and also on account of anticipated decline in mortality. On the other hand, fertility is expected to fall below replacement level offsetting some of the growth. In order to assess likely future population trends, population of India is projected up to 2101 on the basis of recent trends in fertility and mortality and global patterns. The results show that India's population is projected to reach a peak of 1.66 billion around 2060 and then decline slowly. During the process, the age structure of the population will change drastically with a steep rise in the share of the elderly and a drop in the share of the young population and a rise in the share of the working age population for some time yielding the demographic dividend. Projections for large states show that future growth will vary conspicuously across states, since the timing and tempo of the transition have varied regionally. This will result in changing shares of states in the national population substantially. The regional imbalances in population growth have social, economic, and political implications.

Key words: Population projections; Peak population; Inter-state variations; Growth imbalances.

1. Introduction

India experienced enormous population growth during the twentieth century. The population more than quadrupled over the century and the growth was particularly rapid during the second half. The growth occurred due to a welcome development, namely, mortality decline, which was notable after 1921 and quite impressive after 1951. As fertility remained high for some time after mortality decline had set in, rapid population growth naturally took place. This, in turn, raised Malthusian concerns about the impact of population increase on resources and the level of living and consequently neo-Malthusian programmes were introduced in India as in many developing countries. Over time, especially towards the later part of the century, impressive fertility decline was seen and the last decade did show a small fall in the population growth rate. India has further progressed in the demographic transition and the recent estimates of fertility and mortality obtained from the Sample Registration System (SRS) show that fertility has now reached the highly sought replacement level. Thus, the specter of population explosion is no longer seen.

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However, it is well recognised that due to momentum of population growth, population will continue to grow for some time even after reaching replacement level fertility (Keyfitz, 1971). On the other hand, fertility is widely predicted to fall below replacement level and in the long run a declining trend in population size is expected after the effect of population momentum wears off.

Some pertinent questions relevant for development planners and for the society as a whole are: How long will India's population continue to rise? Will it reach a peak and then begin to decline, and if so, what is likely to be the peak, and when would it be reached? Further, given that demographic transition in India has varied spatially, with some states well ahead in transition and some lagging far behind, the peaks are also likely to vary. Will this create regional imbalances in future population growth?

This paper seeks to address these questions on the basis of projections of population for India and for its large states. First, an overview of population growth since 1901 is presented to provide the background for the work followed by the methodology in brief. Results based on projections are presented for India as a whole and then for large states so as to understand variations. Implications of these findings are discussed at the end.

2. Population Growth in India, 1901-2011

The decennial census is the principal source of population size and structure in India. The first census organized around 1871 was not synchronous but since 1881 censuses have been conducted fairly regularly at intervals of 10 years up to 2011; the census scheduled for 2021 has been postponed in view of the COVID19 pandemic. The trends in population size based on censuses of 1901 to 2011 show that the population increased from 238 million in 1901 to 1029 million in 2001, and further to 1211 million in 2011 (see Table 1, Appendix). The population has been growing since 1921 and the growth has been particularly rapid during 1951 to 2001, with the decadal growth being over 20 percent and annual rate of growth above or close to two percent. The decade of 1991 to 2001 did show a small but perceptible fall in the growth rate and the rate declined notably, to well below two percent, during 2001-2011.

The growth of population was caused by mortality decline and as it happens in the process of classical demographic transition, fertility decline was lagged, and hence large transitional growth took place for some time [Table 2 (Appendix) shows trends in key indicators of mortality and fertility for India]. But towards the end of the twentieth century, fertility began to decline impressively curbing the population growth rate somewhat. Fertility decline has continued and recent estimates show that the Total Fertility Rate (TFR) declined to 2.18 in 2017 and 2.15 in 2018 (Registrar General, 2019; Registrar General, 2020a). In conjunction with the female life table constructed based on the age-specific death rates for these years, it can be inferred that the Net Reproduction Rate (NRR) has fallen to a shade below one fertility has achieved the replacement level.

3. Methodology

Reaching replacement level fertility does not imply that population growth will stop immediately. It has been well recognized that after a population with high fertility lowers fertility to replacement level, the population will continue to grow for some time before converging to the stationary state and size due to the phenomenon of population momentum. If an initially stable population attains replacement level fertility within a short time and

fertility and mortality remain constant after that, the ultimate size can be obtained using mathematical formulas. But these would not be applicable to India since fertility decline in India has been gradual and the population was not stable when the fertility decline began as mortality was declining for quite some time before the onset of fertility decline. Moreover, it has been observed that once fertility declines to replacement level, it does not remain constant but instead declines further, going below replacement. Therefore, to have an idea of future growth, it becomes necessary to project population. The standard procedure for this is component projection, which applies projected values of the three components, fertility, mortality, and migration to the baseline population and projects population in future. This allows projection of population along with the age-sex distribution. The technique is straight forward; it involves applying life table survival ratios and age-specific fertility rates to baseline population, making adjustments for migration as appropriate, and continuing the process in time steps. The projections would be as good as the projections of fertility, mortality and migration rates are. Generally, recent trends in these factors are extrapolated. However, there are variations in such projections and hence often alternate projections are made. The United Nations Population Division (UNPD) provides alternate projections called 'variants' with one labeled as 'medium'. This variant is commonly used as the most plausible projection. This is a deterministic approach. Recently, probabilistic projections have been attempted by the UNPD (U.N., 2019). These provide a set of projections at various percentiles. The median projection is equivalent to the 'medium' variant of the deterministic projection. In the present paper, we adopt the standard procedure of component projection using extrapolation of recent trends in fertility and mortality and provide a single projection rather than alternatives. The projections have been carried out up to 2101, that is, the beginning of the next century.

International migration is assumed to be negligible and hence no adjustment has been made for it. The sex ratio at birth, which has become more masculine than the natural level in India in the past two-three decades due to the practice of sex selection is projected to linearly decline to 1.06 by 2031 and remain at that level thereafter on the assumption that, with laws and campaigns to prevent sex selection and social change, this practice would gradually fade away. The baseline for the projections is the 2011 census, that is, March 1, 2011. The age-sex distribution from the census has been used. This has been smoothed following the method adopted by the Registrar General's office (for details, see Technical Group on Population Projections, 2006). From this baseline, population has been projected in intervals of five years up to 2101. The computer package MORTPAK has been used for this purpose.

The demographic transition in India has varied spatially in its timing and pace. Some parts experienced rapid fertility decline in the 1970s and 1980s and achieved replacement level low fertility quite early whereas some states have lagged in the process and are yet to reach low fertility. The latest data from the SRS show that among large states or union territories (those with population of over five million in 2011) of India, 13 (Delhi, West Bengal, Andhra Pradesh, Himachal Pradesh, Jammu & Kashmir, Punjab, Tamil Nadu, Telangana, Karnataka, Kerala, Maharashtra, Uttarakhand, and Odisha) had TFR of less than 2 in 2018 and thus were well below replacement level and three (Gujarat, Haryana, Assam) had TFR of 2.1-2.2 and thus were at replacement level (Registrar General, 2020a). Only Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan, Jharkhand, and Chhattisgarh had fertility above replacement level though these states have also shown a clear declining trend in fertility and are expected to reach replacement level in the near future. The level of mortality also varies across states with Kerala having very low mortality at present and the north-central states far behind though these have also shown notable declines in mortality. The

latest life tables based on the SRS show that during 2014-18 female life expectancy was high, 77.9 and 77.0 respectively, in Kerala and Delhi, and low, 65.8 and 66.6 in Uttar Pradesh and Chhattisgarh respectively, with other states showing values within this range (Registrar General, 2020b). A similar picture is seen for male life expectancy.

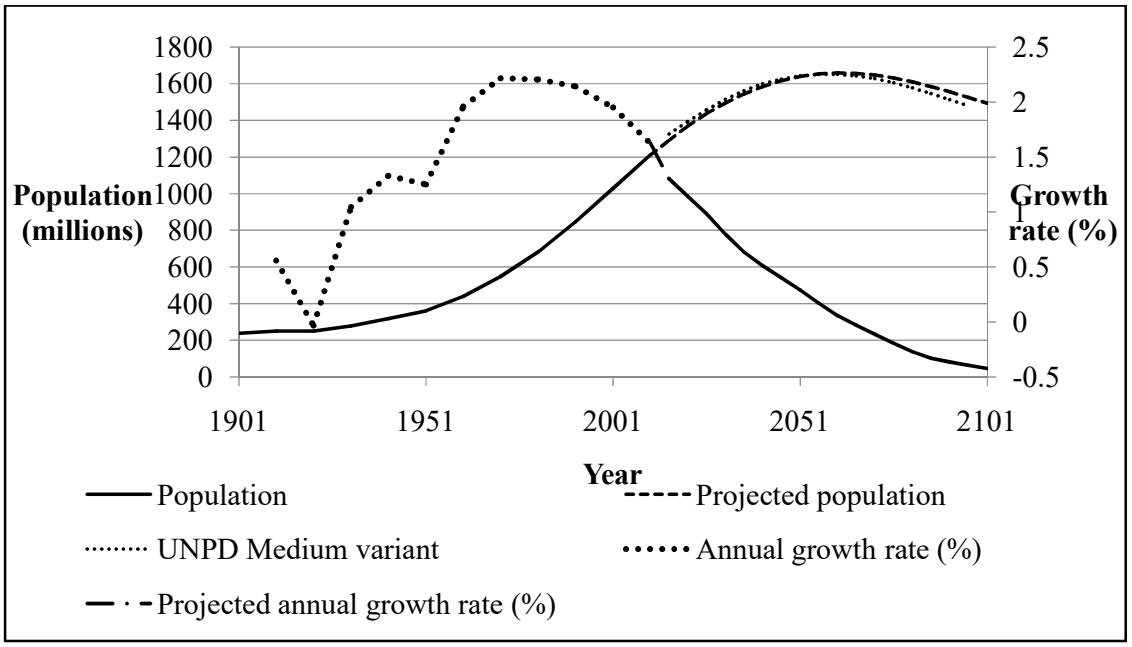
Given the inter-state variations in the initial parameters, future population trends are bound to vary across states. Therefore, it is necessary to make projections for each state individually. The method is identical to that adopted for India. For the national projection, migration was not factored in since international migration is negligible. But inter-state migration does take place and this is notable for some states. Ideally, therefore, inter-state migration should be accounted for in projections for states. On the other hand, projections without making adjustment for migration give an idea of natural increase and reveal expected inter-state imbalances in the absence of migration and thus give an indication of the population pressures for migration. Therefore, it was consciously decided to carry out the projections for states without factoring in inter-state migration. This has been done here for the states/union territories with 2011 population over five million each for which past trends in indicators of fertility and past life tables are available from the SRS there by allowing extrapolation of trends. These states together accounted for 98.5 percent of India's population in 2011. Projections for smaller states/union territories are not done because of non-availability of reliable data on past trends. A single projection has been made for Andhra Pradesh and Telangana combined since past trends in fertility and mortality were not available separately for these states prior to 2014. Similarly, a single projection has been made for Jammu and Kashmir and Ladakh.

4. Results

4.1. Projections for India

The projections show that India's population is expected to continue to grow though at a slower pace up to around 2060 and reach a size of 1659 million. After 2061, a gradual decline is expected and the population is projected to come down to 1500 million by the end of the century. The projected trends in population size and annual growth rate along with trends from 1901 to 2011 are shown in Figure 1. The figure also shows the medium variant in the latest projections by the UNPD in its report (U.N., 2019).The peak of the medium variant in the UNPD projections is 1652 million attained in 2059. Another independent projection by Vollset *et al.* (2020) shows a peak of 1600 million in 2048 in the 'reference' variant, which assumes a more rapid decline in fertility than that in the U.N. projections. It is seen that the U.N. projections agree closely with the projections performed following the extrapolations described above in this paper. This provides confidence to use the projections done in this paper for further discussion.

During the transition from high to low fertility, the age structure of the population also changes. As the growth rate of the population declines, birth cohorts become smaller and with a rise in longevity, population in old ages rises, that is, the populations ages. The remarkable change in the age structure of the population from 2011 to 2101 can be seen from the population pyramids shown in Figure 2 (Appendix). During the process, the share of the Middle Ages, or the working ages, rises substantially for some time leading to the well recognised 'demographic dividend' or the 'window of demographic opportunity' (Bloom *et al.,* 2003). In India, generally the age group 15-59 is considered as working ages and 60+ as old whereas the international convention is to label 15-64 as working ages and 65+ as old. As



Sources: 1901 to 2101*: Registrar General, Census of India* 2011*, Table A*-2.
After 2011: *Author's projections.*
UNDP Medium variant: U.N. (2019)

Figure 1: Past and projected trends in population size (in millions) and annual growth rate (in percent) for India, 1901 to 2011 and 2011 to 2101

longevity has increased considerably in India and is expected to rise further through this century, the international convention of categorization of age has been adopted here. Trends in projected shares of the three broad age groups, 0-14 (young), 15-64 (working) and 65+ (old) are shown in Table 3 (Appendix). A sharp fall in the share of the young ages is seen with a slow but steady rise in that of the old ages. The dependency ratio (ratio of population in young and old ages, considered as 'dependent', to that of the population in working ages) falls from a high of 67 percent in 2001 to 43 percent in the late 2030s.However, after that the rise in old age population becomes notable and the dependency ratio begins to rise. Thus, the advantage of the demographic dividend begins to decline, that is, the window begins to close after 2040, though the dependency ratio would remain below 50 percent till about 2060.

4.2. Projections for states

Projections for large states show that all would grow for some time but then begin to decline slowly. However, states ahead in demographic transition will reach a peak quite early and hence future growth for these would not be large. Table 4 presents the 2001 and 2011 census populations and the projected population in 2101 for large states. The table also shows projected peak populations and the year when the peak is expected to be reached. In Kerala and Tamil Nadu, leaders in the transition, the peak is expected by 2040. Several states like Himachal Pradesh, Punjab, West Bengal, Maharashtra, Delhi, Andhra Pradesh/Telangana and Karnataka are expected to reach peaks during the 2040s and then their populations would begin to decline. Uttarakhand, Jammu and Kashmir, Odisha, Haryana and Gujarat are expected to follow suit during the 2050s. States lagging in transition, Assam, Chhattisgarh, Jharkhand and Madhya Pradesh would grow for a longer time, up to 2060s and Uttar Pradesh

and Bihar even beyond it. The variations in the progress of transition result in corresponding variations in future growth. For the leaders, the 2101 population would not be much different from the 2001 population; in other words, there would be hardly any net growth over the century and for some states even a small decline [see the last column of Table 4 (Appendix)]. In these states, growth due to momentum would be offset by the decline caused by fertility being below replacement fertility for a long time. On the other hand, there would be enormous growth in Uttar Pradesh and Bihar over the twenty-first century, exceeding 100 million each and substantial growth in Rajasthan and Madhya Pradesh, over 40 million each. Such large variations in growth mean huge growth imbalances. Though the 2101 populations of all these states are also projected to be below their peaks, these would still be very large since the peak would be reached quite late in these. In 2101, the population of Uttar Pradesh is projected to be about 300 million, of Bihar 200 million, and of Rajasthan and Madhya Pradesh 100 million. Note that these projections do not factor in inter-state migration. If substantial migration does take place from these states, which are growing rapidly, to states ahead in transition which are expected to reach negative growth early, the imbalances would not be so large. However, for states which are projected to show very large increases over the period, this calls for massive out-migration, which seems unlikely.

High imbalances in growth imply large changes in shares of states in the national population. This can be seen from a comparison of the actual shares in 2001 and 2011 and projected shares at the middle of the century, in 2051, and at the beginning of the next century, in 2101, shown in Table 5 (Appendix). Over the century, Bihar and Uttar Pradesh would increase their share by about five percentage points and Rajasthan and Madhya Pradesh by over one point. On the other hand, Maharashtra, West Bengal, and Tamil Nadu would lose over two percentage points as would Andhra Pradesh and Telangana combined. Karnataka and Kerala would lose over one point. Such changes in share have major economic and political implications.

5. Conclusions

The findings of the study bring out several issues. First, the projections show that India's population will stop growing after some time, reaching a peak of about 1.66 billion most probably around 2060, and then begin to decline. The medium variant of the projections by the UNPD also gives fairly similar results. Thus, India is no longer in the alarming situation of population explosion that was often feared in the not too-distant past. India has completed demographic transition and is projected to move towards below replacement fertility and negative growth after some time. As a result of the transition, the age distribution is bound to change with a sharp decline in the share of young age population and rise in that of working age population. This will yield the well known demographic dividend that has drawn the attention of policy makers and the society as a whole in the recent years. The dependency ratio has by now fallen below 50 percent and it could be said that India has already entered the stage of drawing the dividend. The age distribution would be most favourable in the late 2030s, with the dependency ratio dropping to 43 percent and though the ratio would rise after 2040, as the old age dependency would increase, the degree of dependency would remain below 50 percent until 2060. Thus, India is in a position to benefit from an age structure conducive to economic development for quite some time. However, this is an opportunity and the dividend needs to be harvested by raising the quality of the labour force, creating employment, and increasing female labour force participation. With the passage of time, as the population ages, the share of elderly population would increase giving

rise to large old age dependency. This calls measures to address the needs of the elderly in the areas of health and financial and social security.

The results also show that there would be huge inter-state imbalances in population growth. This is a consequence of the differences in the process of demographic transition across states. While states ahead in the transition would soon reach their peak populations and their populations would then begin to decline, those lagging in transition would grow for a longer time and thus experience massive growth during this century. The growth imbalances would put intense population pressures on the states lagging behind in transition. This could induce large scale migration to states which would have begun to experience negative growth and face labour shortages. Such migration would drive economic growth as this would lead to redistribution of labour to meet the demands in various states. However, this has social implications as the resident population often resists large streams of in-migrants. Besides, migrants also face difficulties at the place of destination and these become critical at the time of crisis as seen recently in the lockdown on account of the COVID 19 pandemic.

In India's structure of governance, state population size is a crucial factor. The number of members to the *Lok Sabha* is based on state's share in the national population. If the shares of some states fall, as has been projected, the number of *Lok Sabha* members from the state would fall with the state losing its weight in the parliament. A constitutional amendment was made in 1976 to freeze the parliamentary seats for each state for some time and this provision has been extended to 2025. But this is a contentious matter in inter-state relations. Similarly, in financial transfers from the central government to states, population size is an important factor. Growth imbalances would impact such transfers. These are issues that need to be addressed in the coming years.

References

Bloom, D. E., David, C., and Jaypee, S. (2003). *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change*. The Rand Corporation: Santa Monica Ca.

Jain, S. P. (1982). Mortality trends and differentials, *in Population of India, Country Monograph Series No.* 10. *ST/ESAP/220.* New York, 135-137.

Keyfitz, N. (1971). On the momentum of population growth. *Demography*, **8**(**1**),71–80.

Registrar General (2015). *Compendium of India's Fertility and Mortality Indicators 1971-*2013 *based on the Sample Registration System* (*SRS*), Office of the Registrar General and Census Commissioner, India, New Delhi.

Registrar General (2016). *Sample Registration System Statistical Report* 2014. Office of the Registrar General and Census Commissioner, India, New Delhi.

Registrar General (2017). *Sample Registration System Statistical Report* 2015. Office of the Registrar General and Census Commissioner, India, New Delhi.

Registrar General (2018). *Sample Registration System Statistical Report* 2016. Office of the Registrar General and Census Commissioner, India, New Delhi.

Registrar General (2019). *Sample Registration System Statistical Report* 2017. Office of the Registrar General and Census Commissioner, India, New Delhi.

Registrar General (2020a). *Sample Registration System Statistical Report* 2018. Office of the Registrar General and Census Commissioner, India, New Delhi.

Registrar General (2020b). *SRS based Abridged Life Tables*2014-18.Office of the Registrar General and Census Commissioner, India, Delhi: Ministry of Home Affairs.

Registrar General and Census Commissioner. *Census of India* 2011,*Table A-2. Decadal variation in population since 1901*.**www.censusindia.gov.in**

Rele, J. R. (1982). Trends and differentials in fertility. In: *Population of India, Country Monograph Series No.* 10. *ST/ESAP/*220. New York, 91-108.

Technical Group on Population Projections (2006). *Census of India* 2001, *Population Projections for India and States, 2001-2026, Report of the Technical Group on Population Projections***,** National Commission on Population, Ministry of Health and Family Welfare, New Delhi.

Technical Group on Population Projections (2020). *Census of India* 2011, *Population Projections for India and States,* 2011-2036*, Report of the Technical Group on Population Projections,* National Commission on Population, Ministry of Health and Family Welfare, New Delhi.

United Nations (2019). *World Population Prospects* 2019.United Nations, Department of Economic and Social Affairs, Population Division 2019. https://population.un.org/wpp, accessed on August 10, 2019.

Vollset, S. E., Emily G., Chun-Wei, Y., Jackie C. *et al*. (2020). Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the global burden of disease study. *Lancet* (Published online July 14, 2020).https://doi.org/10.1016/S0140-6736(20)30677-2.

APPENDIX

Table 1: Population growth in India since 1901

Year of Census	Population (in thousands)	Intercensal increase		
		Absolute (in thousands)	Percent	Annual exponential growth rate (%)
1901	238396			
1911	252093	13697	5.7	0.56
1921	251321	-772	-0.3	-0.03
1931	278977	27656	11.0	1.04
1941	318661	39683	14.2	1.33
1951	361088	42428	13.3	1.25
1961	439235	78147	21.6	1.96
1971	548160	108925	24.8	2.22
1981	683329	135169	24.7	2.20
1991	846421	163092	23.9	2.14
2001	1028737	182316	21.5	1.95
2011	1210570	181832	17.7	1.63

Source: *Extracted from Registrar General and Census Commissioner*, *India, Census of India*, *Table A-2.* *www.censusindia.gov.in*

Table 2: Trends in fertility and mortality, India, 1901-2015

Period	CDR (Crude Death Rate per 1000 population)	Life Expectancy (years)			CBR (Crude Birth Rate Per 1000 population)	TFR (Total Fertility Rate)
		Both sexes	Male	Female		
Census based estimates						
1901-10	42.6	22.9			49.2	
1911-20	48.6	20.1			48.1	
1921-30	36.3	26.8			46.4	
1931-40	31.2	31.8			45.2	
1941-50	27.4	32.1			39.9	
1951-60	22.8	41.3			41.7	
1961-70	19.0	45.6			41.1	
SRS (Sample Registration System) based estimates						
1971-75	15.5	49.7	50.5	49.0	35.6	5.02
1976-80	13.8	52.3	52.5	52.1	33.4	4.50
1981-85	12.1	55.4	55.4	55.7	33.6	4.46
1986-90	10.6	57.7	57.7	58.1	31.4	4.00
1991-95	9.5	60.3	59.7	60.9	28.9	3.54
1996-2000	8.8	61.9	61.2	62.7	26.6	3.27
2001-05	7.9	64.3	63.1	65.6	24.6	2.97
2006-10	7.4	66.1	64.6	67.7	22.8	2.63
2011-15	6.9	68.3	66.9	70.0	21.3	2.34

Sources:
Census based estimates for 1901-70:
CDR and life expectancy: *Jain* (1982), *CBR*: *Rele*(1982).
SRS based estimates:1971 *onwards*:
CDR and CBR: *Averages computed from Registrar* General (2015, 2016, 2017, 2018, 2019, 2020a);
Life expectancy: *Registrar General* (2020b).

Table 3: Trends in population size, broad age distribution and dependency ratio, 2001, 2011 census and 2021 onwards, projected

Year	Population (in millions)	Ages 0-14 years (%)	Ages 15-64 years (%)	Ages 65+ Years (%)	Dependency ratio (ages 0-14 plus 65+) /ages 15-64 years
2001	1029	35.4	59.8	4.8	67.3
2011	1211	30.9	63.7	5.5	57.1
2016	1292	28.3	65.7	5.9	52.2
2021	1368	26.3	67.3	6.4	48.6
2026	1437	24.9	68.2	7.0	46.7
2031	1496	23.1	69.0	7.9	44.9
2036	1544	21.4	69.6	9.0	43.8
2041	1584	19.9	69.7	10.3	43.4
2046	1616	18.8	69.5	11.7	43.9
2051	1640	18.0	68.7	13.2	45.5
2056	1654	17.3	67.7	15.0	47.7
2061	1659	16.6	66.4	17.0	50.6
2066	1656	16.0	64.9	19.1	54.2
2071	1647	15.5	63.5	21.0	57.5
2076	1631	15.2	62.5	22.3	60.1
2081	1609	14.9	61.3	23.8	63.2
2086	1583	14.6	60.2	25.2	66.2
2091	1555	14.4	59.1	26.5	69.2
2096	1524	14.2	58.3	27.6	71.6
2101	1492	14.0	57.7	28.3	73.5

Sources:2001*and* 2011, *Technical Group on Population Projections* (2006, 2020).
2021 *onwards; Author's projections*

Table 4: Projected population growth up to 2101 for large states/union territories, India (*all populations in millions*)

State	2001 Census Population	2011 Census Population	2101 Projected population	Peak Population	Year of peak	Increase 2001-2101
India	1029	1211	1441	1658	2060	412
Andhra Pradesh and Telangana	76	85	76	99	2046	0
Assam	27	31	38	43	2060	12
Bihar	83	104	199	205	2082	116
Chhattisgarh	21	26	33	36	2064	12
Delhi	14	17	15	21	2046	1
Gujarat	51	60	71	80	2056	20
Haryana	21	25	28	33	2055	7
Himachal Pradesh	6	7	6	8	2043	0
Jammu & Kashmir$	10	13	13	16	2054	3
Jharkhand	27	33	45	50	2066	18
Karnataka	53	61	54	72	2046	2
Kerala	32	33	28	37	2040	-4
Madhya Pradesh	60	73	104	112	2068	44
Maharashtra	97	112	95	133	2045	-1
Odisha	37	42	45	52	2054	8
Punjab	24	28	22	32	2043	-2
Rajasthan	57	69	101	109	2070	44
Tamil Nadu	62	72	55	80	2038	-8
Uttar Pradesh	166	200	301	327	2070	135
Uttarakhand	8	10	10	13	2052	1
West Bengal	80	91	77	107	2043	-3

$: Including Ladakh.

Sources: 2001 *and* 2011, *Registrar General and Census Commissioner, Census of India* 2011, *Table A*-2.
Projected populations and peaks: Author's projections.

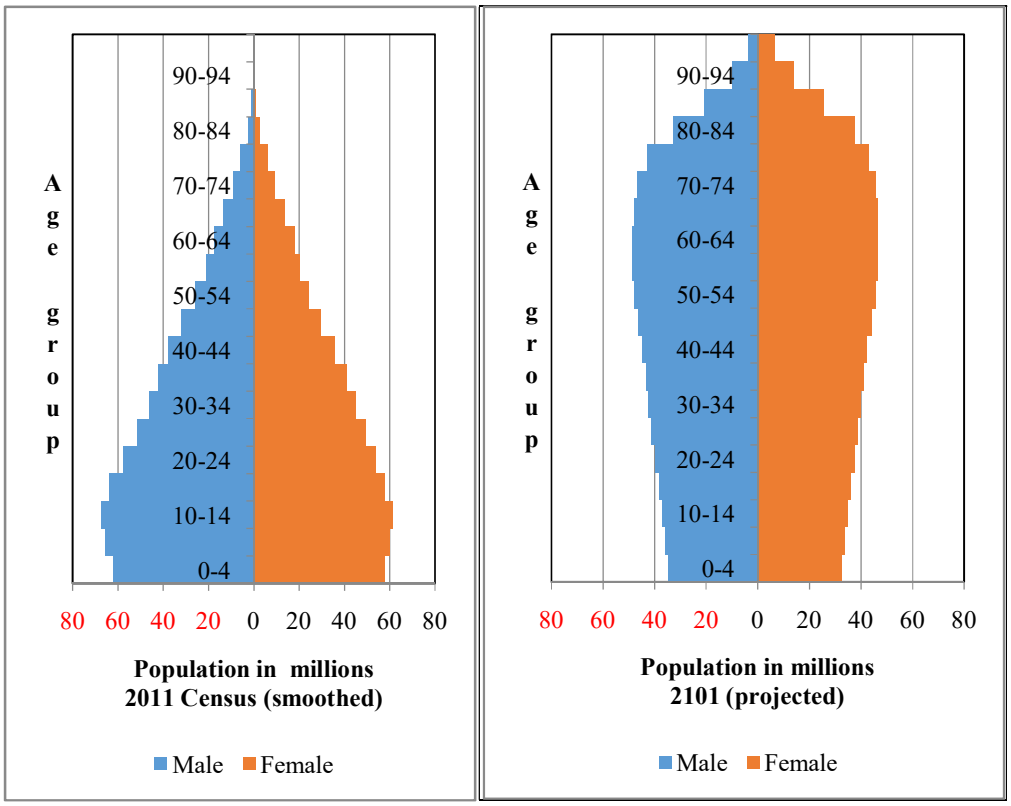
Table 5: Percentage population shares of large states/union territories, India, 2001 and 2011 census and 2051 and 2101 projected

State	2001	2011	2051	2101
Andhra Pradesh and Telangana	7.4	7.0	6.0	5.3
Assam	2.6	2.6	2.6	2.7
Bihar	8.1	8.6	11.2	13.8
Chhattisgarh	2.0	2.1	2.2	2.3
Delhi	1.3	1.4	1.2	1.0
Gujarat	4.9	5.0	4.8	4.9
Haryana	2.1	2.1	2.0	2.0
Himachal Pradesh	0.6	0.6	0.5	0.4
Jammu & Kashmir$	1.0	1.0	1.0	0.9
Jharkhand	2.6	2.7	2.9	3.1
Karnataka	5.1	5.0	4.4	3.8
Kerala	3.1	2.8	2.2	1.9
Madhya Pradesh	5.9	6.0	6.6	7.3
Maharashtra	9.4	9.3	8.0	6.6
Odisha	3.6	3.5	3.1	3.1
Punjab	2.4	2.3	1.9	1.5
Rajasthan	5.5	5.7	6.4	7.0
Tamil Nadu	6.1	6.0	4.7	3.8
Uttar Pradesh	16.2	16.5	19.1	21.0
Uttarakhand	0.8	0.8	0.8	0.7
West Bengal	7.8	7.5	6.4	5.3
Remaining states and union territories	1.6	1.6	1.9	1.9
India	100.0	100.0	100.0	100.0

$: Including Ladakh

Sources: 2001 *and* 2011, *computed from the data in Registrar General, Census of India, Table A-2.*

2021 *onwards; Author's projections.*



Sources: 2011,*Age distribution from Technical Group on Population Projections* (2020), *smoothed.* 2101 *onwards; Author's projections*

Figure2: Population pyramids,India, 2011 census and 2101 projected (*populations inmillions*)