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BY **CARL HAUB** AND **O.P. SHARMA**



**INDIA
APPROACHES
REPLACEMENT
FERTILITY**



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Population Bulletin

INDIA APPROACHES REPLACEMENT FERTILITY

BY **CARL HAUB** AND **O.P. SHARMA**

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INDIA APPROACHES REPLACEMENT FERTILITY

47%

The share of the population below age 25.

69%

The percent of the population living in rural areas.

1.7
BILLION

The 2050 projected population.

2.3

The total fertility rate (lifetime births per woman).

This *Population Bulletin* updates a previous *Bulletin* from 2006, *India's Population Reality: Reconciling Change and Tradition*. India's population (currently at 1.3 billion) will exceed China's before 2025 to make India the world's most populous country.¹ India's annual increase of about 19 million people contributes more to the annual world population growth of about 89 million than any other country.

However, the most recent population data shows a **country headed for replacement level fertility**—albeit, with notable regional differences in fertility trends.

As we mentioned in 2006, India is a country of diverse ethnic, linguistic, geographic, religious, and demographic features. We also described India then as “a collection of many countries held together by a common destiny and a successful democracy.” And, despite its emerging economic power and multiple megacities, Indian life remains largely rooted in its villages. Indeed, we argue in this *Bulletin* that deep-rooted cultural traditions will have a bearing on the ability of different regions of the country to reach replacement level fertility.

The Context

India gained independence from Great Britain in 1947 after decades of struggle against the former colonial power. India was partitioned into primarily Hindu India and Muslim Pakistan. The eastern part of the original Pakistan broke off and is today's Bangladesh. In the largest mass migration ever recorded, Hindus fled Pakistan for India and Muslims fled India for Pakistan. Out of millions involved, hundreds of thousands were killed.

At independence, India consisted of provinces defined by the British who often ignored ethnic boundaries, along with more than

500 princely states whose territory was ultimately taken over by the new Indian government. Boundaries for today's states were largely drawn along language lines after independence in 1947. India is now a federal republic comprising 29 states and 7 Union Territories.² New states are created periodically to ease the burden of governing as state populations grow, or to provide separate states for ethnic and tribal groups. The newest is Telangana, formerly the northern districts of the southern state of Andhra Pradesh.³

India's 1.2 million square miles (3.2 million square kilometers) equal about one-third the land area of the United States. In the far north, India is dominated by the grand sweep of the Himalayas, Hindu Kush, and Patkai mountain ranges, which soon transition to the vast and fertile Indo-Gangetic plain of the north, fed by such major rivers as the Ganges and Yamuna. Many of India's most populous states are located here such as Uttar Pradesh, Bihar, Punjab, Jharkhand, West Bengal, and Madhya Pradesh (see Figure 1, page 3). Moghuls invaded from Afghanistan in the 16th century, leaving a mark on the architecture, food, and dress of northern India still discernable today.⁴ Hindi, India's official language of government, is spoken in much of the north, with the area from Rajasthan to Bihar often referred to as the “Hindi Belt.” This region, home to slightly more than 40 percent of the national

population, is known for higher birth and death rates, low literacy levels, and endemic rural poverty.

Mountain ranges divide north from south, marking the beginning of the Deccan Plateau that comprises much of southern India. The north/south division also marks enormous socioeconomic differences. In contrast to the stark poverty and poor health common in the north, the southern states of Kerala, Karnataka, and Tamil Nadu are known for high literacy levels, long life expectancy, and low birth rates. Throughout history, the south had more contact with an outside world attracted by its profitable spice trade. Trade and foreign interactions encouraged literacy and introduced a diversity of religions.

Population Change

The first modern population census was conducted in 1881, and a census has been taken every 10 years since (see Box 1, page 5). The total population was 238 million in 1901 and it grew only modestly for many decades before accelerating in the latter half of the 20th century (see Table 1; see Figure 2, page 4).

The year 1921 is often referred to as the “Year of the Great Divide,” because it marked the shift from a pattern of relatively static population size to one of steady increase. Many factors contributed, including the end of widespread famines. India’s population growth rate peaked between the 1971 and 1981 Censuses, and the increase between 2001 and 2011 was slightly smaller than in the previous decade. India’s population growth slowed as the birth rate gradually declined beginning in the late 1960s. Since the early 1970s, the birth rate has fallen from just under 40 births per 1,000 population to 21 per 1,000 in 2013.⁵

AGE STRUCTURE

The history of high birth rates has kept India’s population relatively young: In 2015, about 29 percent of the population was below age 15 and just 6 percent was age 65 and older. The age and sex population pyramid with a relatively broad base taken from United Nations projections shows this youthfulness clearly (see Figure 3, page 6). Nearly half of the population, 47 percent, is below age 25. The young population virtually guarantees further growth: As these young people produce their own families, they also require additional schools, jobs, and housing.

In some states younger women appear to be undercounted. In Uttar Pradesh, the 2011 Census counts indicate there were only 87 percent of females to males in both the 15-to-19 and 20-to-24 age segments, yet the female share of the 25-to-29 age group jumps to 95 percent, a normal proportion. This increase is evidence that younger women are undercounted below age 24 but reappear in the counts around age 25.⁶

FIGURE 1

Indian States and Union Territories, 2015



Note: Map not drawn to scale.

TABLE 1

Population Size and Growth, India, Census Years 1901-2011

CENSUS YEAR	TOTAL POPULATION	CHANGE	POPULATION GROWTH RATE ANNUAL, %	MULTIPLE OF 1901 POPULATION
1901	238,396,327		-	1.0
1911	252,093,390	13,697,063	0.6	1.1
1921	251,321,213	-772,177	-0.0	1.1
1931	278,977,238	27,656,025	1.0	1.2
1941	318,660,580	39,683,342	1.3	1.3
1951	361,088,090	42,427,510	1.2	1.5
1961	439,234,771	78,146,681	2.0	1.8
1971	548,159,652	108,924,881	2.2	2.3
1981	683,329,097	135,169,445	2.2	2.9
1991	846,302,688	162,973,591	2.1	3.5
2001	1,028,737,436	182,434,748	2.0	4.3
2011	1,210,854,977	182,117,541	1.6	5.1

Note: Map not drawn to scale.

Source: Office of the Registrar General and Census Commissioner General, India, Population Enumeration Data, Final Population, Table A-2, Decadal Variation In Population Since 1901.

Population Policies

India was the first country to adopt an official policy to slow population growth, beginning with its first Five Year Plan in 1952.⁷ During the 1950s, the country was experiencing accelerated population growth from declining death rates and high birth rates—a situation shared by many developing countries in that period. Initial efforts to implement a family planning program were limited, beginning with a budget of US\$1.35 million. The program set up family planning clinics with the expectation that people would come to the clinics on their own. But deep-seated traditions that favored larger families and the scope of bringing services to a vast, largely rural population were serious obstacles.

In the second Five Year Plan (1956-1961), the government increased expenditures for family planning, introduced the idea of incorporating family planning into community-based development programs, and expanded home visits. The population program was brought under the new Ministry of Health and Family Planning in 1966.⁸

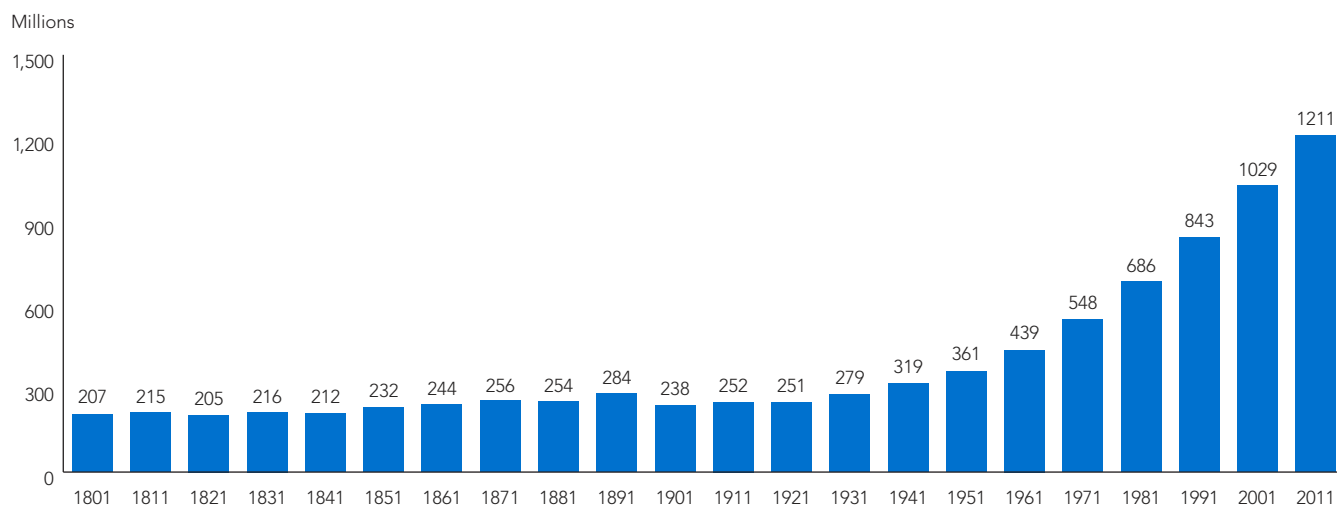
India's population growth rate continued to rise, setting the stage for the family planning program's most controversial period. In 1975, Prime Minister Indira Gandhi declared a national emergency partly to thwart political opposition. Many states adopted coercive measures along with quota systems that resulted in the establishment of the infamous sterilization camps. In the 1976 to 1977 program year, 8.3 million sterilizations, primarily vasectomies, were performed, up from 2.7 million the year before.⁹ The abuses and poor publicity generated by the “emergency” caused the

government to suspend family planning services for years.¹⁰ By the 1977-1978 program year, only 900,000 sterilizations were reported. The slow decline in India's fertility rate of the previous decade stopped. The name of the ministry responsible for family planning was changed to the Ministry of Health and Family Welfare. Mrs. Gandhi's party was voted out of office, in part because of the backlash against the involuntary sterilizations. Successive governments—including one led by Mrs. Gandhi herself who returned to power in 1980 until her assassination in 1984—have been careful to emphasize the voluntary nature of the program.

Following the 1994 International Conference on Population and Development in Cairo, India announced that it was adopting a “target-free” approach in its population policy. This change reflected the spirit of the Cairo conference, which specified greater emphasis on a full program of reproductive health that would be less concerned with specific demographic goals.¹¹ In reality, this new approach has been applied differently in different areas of the country. In some cases, local clinics found it hard to operate without specific quotas, for example, for condoms distributed. Some states, such as Andhra Pradesh continued to offer incentives such as cash (500 rupees) or goods, such as transistor radios, for women who agreed to sterilization. In 2007-2008, in the District Level Household and Facility Survey-3 (DLHS-3), 34 percent of women ages 15 to 49 had been sterilized. The failure of some states to lower their birth rates as much as others has also undermined their political clout in the national legislature. With the rapid growth of northern states, giving more seats was viewed as rewarding them for poor performance in lowering birth rates. Accordingly, the Indian Supreme Court has repeatedly frozen the allocation of seats to the population distribution that existed in 1971.

FIGURE 2

India's Population Growth, 1801-2011



Note: Estimates prior to 1901 include other parts of the Indian subcontinent.

Sources: 1801 to 1971: United Nations, *Population of India: Country Monograph Series No. 10* (1982); tables 2 and 4; and 1981 to 2011: Office of the Registrar General and Census Commissioner, India, Population Enumeration Data, Table A-2.

BOX 1

Population Statistics in India

THE CENSUS OF INDIA—COUNTING MORE THAN 1 BILLION PEOPLE

India's census is a monumental exercise that involves 2 million enumerators and supervisors. In the year before the census, enumerators canvas the country listing every dwelling—whether a house or temporary structure—in a house-listing phase. This list serves as a basis for planning enumerator assignments and other organizational needs to ensure that enumerators visit each dwelling.

In 2011, the census date was March 1, and provisional population totals were released only three weeks after the census date, a quicker tally than in any other country. After the 2011 Census, the Registrar General's office estimated that the census undercount was about 2.3 percent of the population.

The census highlights the fact that many Indians do not know their exact birthdates and often report an approximate age rounded to the last digit of "0" or "5." As shown in the figure, this rounding causes pronounced "heaping" of census data by age. The 0-to-4 age group is underrepresented in the count for unknown reasons and there is a large deficit of females below age 25.

THE SAMPLE REGISTRATION SYSTEM (SRS) MONITORS ANNUAL CHANGE

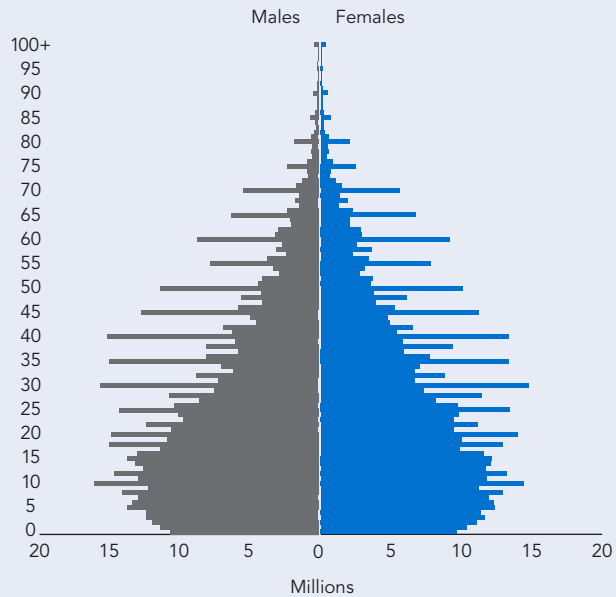
India is one of a few developing countries that have annual birth and death rates available. Since the 1970s, its Sample Registration System (SRS) has collected data on births and deaths from sample villages and from sample census blocks in urban areas. India publishes annual estimates of birth, death, and infant mortality rates; life expectancy; and other key measures, for the nation and most states. The quality of SRS estimates has improved over the years and provides valuable data for officials and planners who rely on population information. In 2013, the SRS covered 7,597 sample units comprising 1.5 million households and 7.5 million people.

SURVEYS ENRICH DEMOGRAPHIC DATA

The National Family Health Surveys (NFHS), part of the global Demographic and Health Surveys, which are conducted with the technical assistance of ICF International, and in cooperation with national governments, have provided a wealth of information

In 2000, the year India's population reached 1 billion, the government promoted its first National Population Policy.¹² This policy contained a comprehensive sociodemographic program covering 14 topics such as reducing infant and maternal mortality, promoting delayed marriage, universal immunization of children, and preventing the spread of HIV. The policy committed to couples' "voluntary and informed choice" of reproductive health services, so that replacement level fertility could be achieved by 2010.

India's Population by Sex and Single Years of Age, 2011 Census



Source: Office of the Registrar General and Census Commissioner, India, 2011 Census.

on a wide variety of sociodemographic topics. These include contraceptive use, childbearing desires, the status of women, infant mortality, coverage of immunizations, use of iodized salt, reproductive health, and knowledge of HIV/AIDS in India. The first three surveys were taken in 1992-1993, 1998-1999, and 2005-2006. The latter survey also conducted blood tests to measure HIV prevalence. A fourth survey was underway during 2014-2015. The District Level Household and Facility Survey (DLHS), conducted by the International Institute for Population Studies in Mumbai, collects similar data down to the district level. The most recent survey was held in 2007-2008.

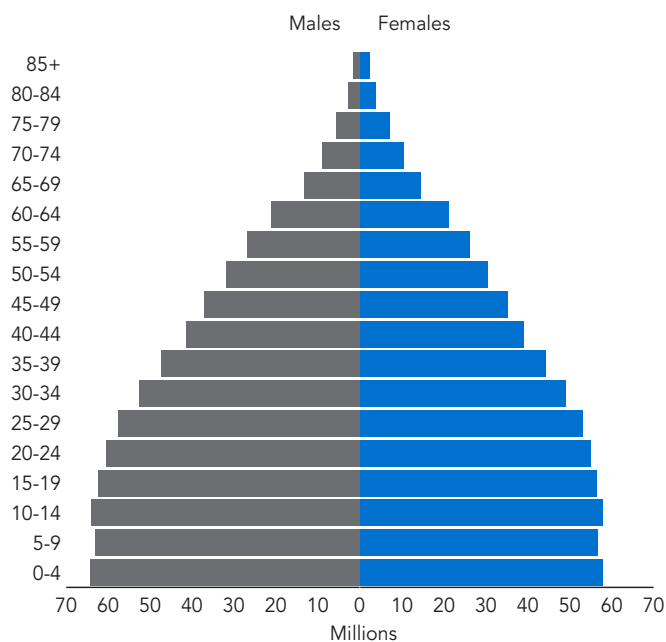
Sources: Office of the Registrar General and Census Commissioner, India, "A-2 Decadal Variation in Population Since 1901," accessed at www.censusindia.gov.in/2011census/PCA/A2_Data_Table.html on April 8, 2015; Office of the Registrar General and Census Commissioner, India, "C-13 Single Year Age Returns by Residence and Sex," accessed at www.censusindia.gov.in/2011census/C-series/C-13.html on April 8, 2015; Office of the Registrar General and Census Commissioner, India, "Report on Post Enumeration Survey," accessed at www.censusindia.gov.in/2011Census/pes/pes_highlights.html on April 8, 2015; and Office of the Registrar General and Census Commissioner, India, "Sample Registration System Report 2013," accessed at www.censusindia.gov.in/2011-common/Sample_Registration_System.html, on April 8, 2015.

Fertility and Family Planning Trends

Since 1950, fertility in India has decreased by about half, from a total fertility rate (TFR, or number of children per woman) of just under six children per woman to about 2.34 in 2013. In India, replacement fertility is about 2.23, meaning that India may reach replacement fertility as soon as 2016. Replacement fertility, which is about 2.06 in Europe, means that each couple simply "replaces" itself in the population, not increasing the size of each subsequent generation. Eventually, population

FIGURE 3

Population of India by Age and Sex, 2015



Source: United Nations Population Division, *World Population Prospects, the 2015 Revision* (New York: UN, 2015).

TABLE 2

Trends in Contraceptive Prevalence in India, Percent

	NFHS-1 1992-1993	DLHS-3 2007-2008
Any Method	40.6	54.8
Any Modern Method	36.3	48.2
Pill	1.2	3.6
IUD	1.9	1.8
Condom	2.4	5.5
Female Sterilization	27.3	35.8
Male Sterilization	3.4	1.1
Any Traditional Method	4.3	6.4
Periodic Abstinence	2.6	4.4
Withdrawal	1.4	2.0
Other	0.2	0.0

Source: IRC Macro, National Family Health Survey-1, 1992-1993 (NFHS-1); and International Institute of Population Sciences, District Level Household and Facility Survey-3, 2007-2008 (DLHS-3).

growth will come to an end. Replacement fertility is higher in much of the developing world, at 2.2 to 3.0 children per woman, because a somewhat larger proportion of women than in developed countries do not survive to the end of their childbearing years due to lower life expectancy at birth.

Of the 20 larger Indian states, 12 had TFRs of 2.2 children per woman or less in 2013 and in 10 of those, it was below 2.0.¹³ In two of India's larger states, Bihar and Uttar Pradesh, the TFRs were India's highest at 3.4 and 3.1, respectively, but those states are down from rates of over 6.0 in the early 1970s, and they continue to decline (see Figure 4, page 7).¹⁴

Despite the obstacles, such as a lack of knowledge of contraception, family planning use slowly rose in India, from 13 percent of couples in 1970 to 54 percent in 2007/2008.¹⁵ Given the problems of supplying information and services to more than 250 million women of reproductive age, this increase is a remarkable achievement. Women's knowledge of contraception is nearly universal, although knowledge of traditional methods such as rhythm and withdrawal is less common. Most Indian women know about female sterilization but other modern methods, such as the IUD, pill, or injectable, are much less well known.¹⁶

Female sterilization remains the most common method (see Table 2). Sterilization is often viewed as the only alternative since spacing methods such as the pill and IUD are widely mistrusted for fear of side effects, and effective use of traditional methods, such as periodic abstinence and withdrawal, in actual practice would be questionable. In successive years, the unpopularity of male sterilization can be seen not only in its low prevalence but in its decline from year to year. The large majority of vasectomies recorded in the first National Family Health Survey (NFHS-1) in 1991 was among older husbands who had been sterilized during the 1970s Emergency. In NFHS-1, 11 percent of husbands ages 45 to 49 had been sterilized, compared to only 1 percent of those ages 25 to 29. The high rate for males 45 to 49 suggests just how extensive the sterilization campaigns were.

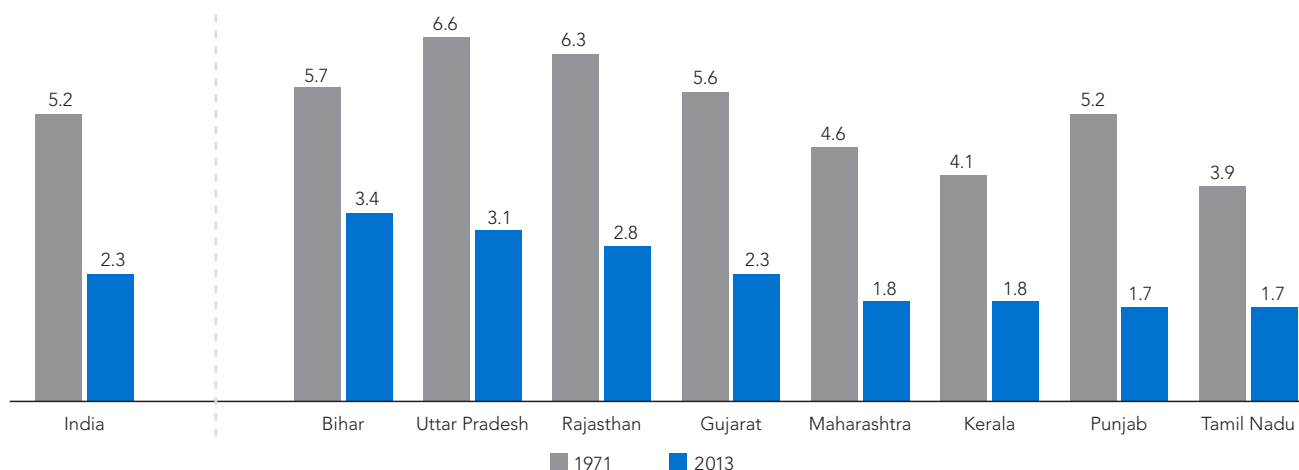
In 2007 to 2008, the DLHS-3 reported that contraceptive use was higher in urban areas than rural, 61 percent to 52 percent (see Figure 5, page 7). Among religious groups, Jains had the highest use at 71 percent, followed by Sikhs at 69 percent, Buddhists and neo-Buddhists at 60 percent, Hindus at 57 percent, Christians at 48 percent, and Muslims at 43 percent. Muslims rely on female sterilization much less than any other religious group: Only 20 percent of Muslims were sterilized. Contraceptive use was also well below the national average among women from the Scheduled Tribes (STs) in 2007/2008 at 47 percent, although that of the Scheduled Castes (SCs) was right on the national average at 55 percent. STs and SCs are officially defined minorities.

Contraceptive prevalence varies widely among the states. In 2007 to 2008, the DLHS-3 reported that, among the larger states in population, those with the highest level of use were

FIGURE 4

Total Fertility Rate, India and Selected States, 1971 and 2013

Children Per Woman



Note: Data in grey bar for Bihar from 1981.

Source: Office of the Registrar General and Census Commissioner, India, *Sample Registration System, 1971 and 2013*.

West Bengal, Himachal Pradesh, Punjab, Andhra Pradesh, Maharashtra, and Kerala with between 64 percent and 72 percent using contraception. The two states with the lowest levels of use were Uttar Pradesh and Bihar, with 33 percent and 38 percent, respectively.

The predominant use of female sterilization is an important reason India is nearing replacement fertility. The three states with the highest proportion of married women sterilized were Andhra Pradesh with 62 percent in 2007 to 2008, Karnataka (58 percent), and Tamil Nadu (56 percent) in DLHS-3. In Andhra Pradesh in 2005 to 2006, in NFHS-3, the share rose to 79 percent among women 30 to 39 years old and was 39 percent among 20-to-24 year olds. Since the beginning of the family planning program the government has paid a cash benefit to men and women who underwent sterilization. Odisha had the highest proportion of women at 86 percent, in 2007 to 2008, followed by West Bengal (81 percent), and Karnataka (79 percent). Overall in India, the share of women receiving a cash payment for sterilization was 62 percent.

Sex Ratio at Birth

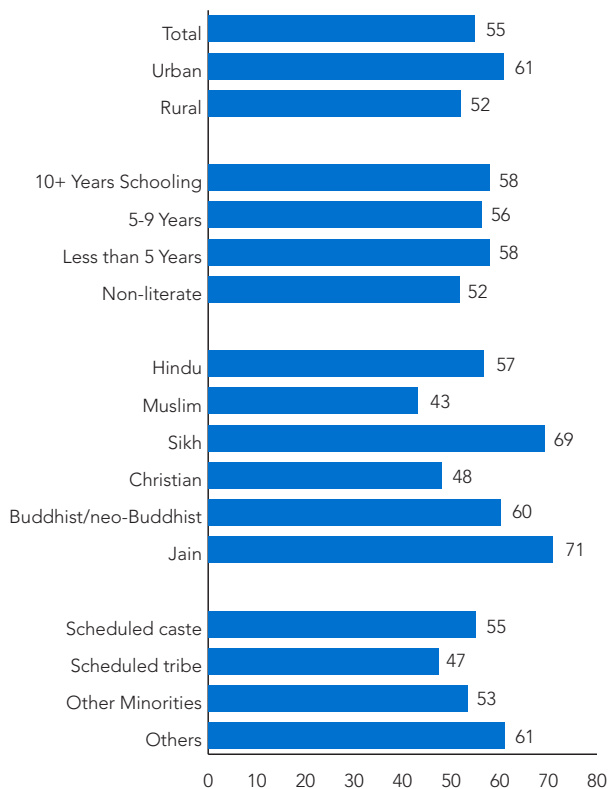
One of the most striking features of India’s population profile is its abnormally high ratio of males to females, particularly at young ages. While about 105 boys are born for every 100 girls in most countries, the ratio was about 110 per 100 in India in 2013 (see Table 3, page 8). The overriding explanation is the abortion of female fetuses.

Efforts to stem the practice of sex-selective abortion face some serious obstacles. The preference for a son is rooted in the cultural expectation that a son will provide for the parents in old age and a strong desire that a son light the parents’

FIGURE 5

Contraceptive Use by Selected Indicators, 2007-2008

Percent of Married Women Ages 15-49 Using Any Method, 2007-2008



Source: International Institute of Population Sciences, District Level Household and Facility Survey-3 2007-2008.

funeral pyres. In reality, daughters leave the household upon marriage to live with their in-laws. A common saying makes this preference quite clear: "Having a daughter is like watering your neighbor's garden." The motivation to have a son becomes stronger as the TFR declines.

While abortion has been legal in India since 1972, sex-selective abortion has been illegal since 1994. The government has conducted an effective "Save the Girl Child" campaign. In states with abnormally high sex ratios at birth, such as Haryana and Punjab, ratios have declined from 125 (1999-2001) to 116

(2011-2013) in Haryana and from 129 to 115 in Punjab, both still high but decreasing.

Data from DLHS-3 illustrate how strong son preference really is. Among couples with two children, the use of family planning is much higher for couples with one or more sons, at 71 percent, than for couples with no sons, at 49 percent. When couples have four or more children with at least one son, the contraceptive prevalence rate is 62 percent, but 39 percent for those with no sons (see Figure 6, page 10).

Mortality

India's infant mortality has declined steadily (see Figure 7, page 10). In the early 1970s, the infant mortality rate (IMR) was about 135 deaths of infants under age 1 per 1,000 live births. By 2013, the IMR declined to about 40 deaths per 1,000 births. In recent years, the pace of improvement has picked up. Life expectancy at birth rose from 50 in 1970-1975 to 68 years for the 2009-2013 period, similar to levels in neighboring Bangladesh, Nepal, and Pakistan. Yet some Indian states, like Kerala, and other Asian countries, such as Sri Lanka and Thailand, have much higher life expectancies, well above 70 years, suggesting there is considerable room for improvement in India. However, a substantial fall in mortality could boost population growth unless accompanied by further declines in the birth rate (see Table 4).

Life expectancy at birth varies by 12 years among Indian states, ranging from 63 years in Assam to 75 years in Kerala. These differences reflect a large gap in education and access to health services among states.

TABLE 3

Ratio of Boys per 100 Girls at Birth, Selected States of India, 1999-2001 to 2011-2013

	1999-2001	2005-2007	2011-2013
Kerala	107.9	104.4	103.5
Karnataka	107.0	108.0	104.4
Tamil Nadu	108.0	105.9	107.9
Assam	104.0	106.5	108.7
Punjab	129.0	119.5	115.3
Haryana	124.5	118.6	115.7

Note: Globally, the average sex ratio at birth is 105 boys to 100 girls.

Source: Office of the Registrar General and Census Commissioner General, India, Sample Registration System, various issues.

TABLE 4

Life Expectancy at Birth, 1970-75 and 2009-2013, India and Selected States

	1970-1975			2009-2013			CHANGE BOTH SEXES
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	
India	49.7	50.5	49.0	67.5	65.8	69.3	17.8
Uttar Pradesh	43.0	45.4	40.5	63.8	62.5	65.2	20.8
Tamil Nadu	49.6	49.6	49.5	70.2	68.2	72.3	20.6
Odisha	45.7	46.0	45.3	64.8	63.8	65.9	19.1
Maharashtra	53.8	54.5	53.3	71.3	69.4	73.4	17.5
Punjab	57.9	59.0	56.8	71.1	69.1	73.4	13.2
Kerala	62.0	60.8	63.0	74.8	71.8	77.8	12.8

Source: Office of the Registrar General and Census Commissioner General, India, Sample Registration System, various issues.

Geographic Diversity

More than one-half of India's population lives in just six states: Uttar Pradesh, Maharashtra, Bihar, West Bengal, Andhra Pradesh, and Madhya Pradesh (see Table 5). Uttar Pradesh, with 200 million people in 2011, is larger than either Pakistan or Bangladesh, and its population may well have surpassed that of Brazil—the world's fifth largest country—in 2011.

The Indian population is heavily concentrated in the broad fertile northern plains. Historically higher birth rates in the northern states continue to shift a larger share of India's population growth northward. Fertility decline has been most dramatic in southern states, which continue to contribute less and less to India's annual population increase. Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu accounted for 21 percent of the country's population in 2011, but contributed only 15 percent of its population growth since 2001. This disparity will likely increase. Population projections by the Population Reference Bureau indicate, for example, that Kerala's population will only grow from 32 million in 2001 to about 41 million in 2050, while that of Uttar Pradesh could rise from 200 million to as many as 400 million in that same time period.

INDIA LIVES IN ITS VILLAGES

Although many Westerners associate Indian life with teeming megacities like Delhi and Mumbai (Bombay), the large majority of Indians live in relatively small localities and are engaged in farming or an activity that supports farming. In 2011, 69 percent of the population lived in rural areas, while three-quarters of these rural dwellers lived in villages of fewer than 5,000 people.¹⁷ Throughout most of India, rural residents have lower educational levels, higher mortality and fertility, higher poverty, and fewer modern amenities than urban residents. While Indian families move to urban areas, rural-to-urban migration has been much slower than in many regions of the world. Many Indians spend their entire lives within a relatively limited geographic area.

Urban India

The definition of an urban place in India has varied over time, but it is now similar to that used in most other developing countries. Locations are classified as urban if they have at least 5,000 people; a population density of at least 400 people per square kilometer (1,000 per square mile); and less than 25 percent of the male labor force directly engaged in agriculture. Many villages with more than 5,000 inhabitants are still considered rural if they do not meet the other two criteria.

Before 1951, defining an urban area was at the discretion of local authorities. The census commissioner noted in 1971 that "it was sarcastically put that at some of the earlier censuses in the pre-independence era, some princely states of India, in order to lay a claim to respectability, were inclined to treat any village with a lamp-post as an urban centre."¹⁸

TABLE 5

Population Size and Growth of Indian States and Union Territories, 2001–2011

	2001	2011	GROWTH RATE	PER-CENT OF NAT. POP.
India	1,028,737,436	1,210,569,573	16.3	100
Uttar Pradesh	166,197,921	199,812,341	18.4	16.5
Maharashtra	96,878,627	112,374,333	14.8	9.3
Bihar	82,998,509	104,099,452	22.7	8.6
West Bengal	80,176,197	91,276,115	13.0	7.5
Andhra Pradesh	76,210,007	84,580,777	10.4	7.0
Madhya Pradesh	60,348,023	72,626,809	18.5	6.0
Tamil Nadu	62,405,679	72,147,030	14.5	6.0
Rajasthan	56,507,188	68,548,437	19.3	5.7
Karnataka	52,850,562	61,095,297	14.5	5.0
Gujarat	50,671,017	60,439,692	17.6	5.0
Odisha	36,804,660	41,974,218	13.1	3.5
Kerala	31,841,374	33,406,061	4.8	2.8
Jharkhand	26,945,829	32,988,134	20.2	2.7
Assam	26,655,528	31,205,576	15.8	2.6
Punjab	24,358,999	27,743,338	13.0	2.3
Chhattisgarh	20,833,803	25,545,198	20.4	2.1
Haryana	21,144,564	25,351,462	18.1	2.1
Delhi	13,850,507	16,787,941	19.2	1.4
Jammu & Kashmir	10,143,700	12,541,302	21.2	1.0
Uttarakhand	8,489,349	10,086,292	17.2	0.8
Himachal Pradesh	6,077,900	6,864,602	12.2	0.6
Tripura	3,199,203	3,673,917	13.8	0.3
Meghalaya	2,318,822	2,966,889	24.6	0.2
Manipur	2,293,896	2,570,390	11.4	0.2
Nagaland	1,990,036	1,978,502	-0.6	0.2
Goa	1,347,668	1,458,545	7.9	0.1
Arunachal Pradesh	1,097,968	1,383,727	23.1	0.1
Puducherry*	974,345	1,247,953	24.7	0.1
Mizoram	888,573	1,097,206	21.1	0.1
Chandigarh*	900,635	1,055,450	15.9	0.1
Sikkim	540,851	610,577	12.1	0.1
Andaman & Nicobar Islands*	356,152	380,581	6.6	-
Dadra & Nagar Haveli*	220,490	343,709	44.4	-
Daman & Diu*	158,204	243,247	43.0	-
Lakshadweep*	60,650	64,473	6.1	-

*Union Territory

- Less than 0.1 percent

Note: Totals for states not adjusted to final count.

Source: Office of the Registrar General and Census Commissioner General, India, 2011 Census.

As in other countries of South Asia, India's urban population has grown relatively slowly compared to other countries over the last century. While many other parts of the world experienced rapid urbanization, the percent of Indians living in urban areas grew from 28 percent in 2001 to 31 percent in 2011 (see Box 2, page 13). Urban areas added virtually the same as did rural areas from 2001 to 2011 (see Table 6, page 11).

Indian Megacities

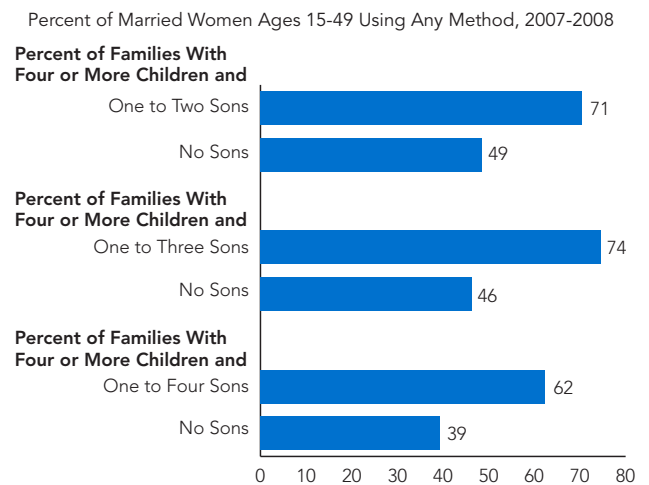
India's urban areas are highly varied. Nearly 40 percent of India's urban population live in cities with 1 million or more people, but nearly one-third live in cities and villages with fewer than 100,000 people.

Four of the world's megacities are in India: Delhi, Mumbai (Bombay), Kolkata (Calcutta), and Bengaluru (Bangalore).¹⁹ All have populations exceeding 10 million (see Table 7, page 11). Delhi is one of the world's oldest cities and has been India's capital since 1931. Delhi is the world's fastest-growing megacity, adding about 750,000 people per year. The city has long since expanded beyond the original inhabited area and has much room to grow, both within its borders and in its adjacent suburbs. Kolkata and Mumbai were established under colonial rule. Kolkata was founded as a port for the British East India Company while Bombay ("good bay") was founded by Portuguese colonialists. India's fifth largest city, Chennai in the southern state of Tamil Nadu, was another British colonial city, beginning as Ft. George.

Mumbai, located on a long peninsula in Maharashtra state, has been forced to build up rather than out and available land is now virtually nonexistent. Across the bay on the mainland, large cities such as New Bombay have sprung up, giving the greater Mumbai area a much different character

FIGURE 6

Contraceptive Prevalence by Number of Living Sons, India, 2007-2008



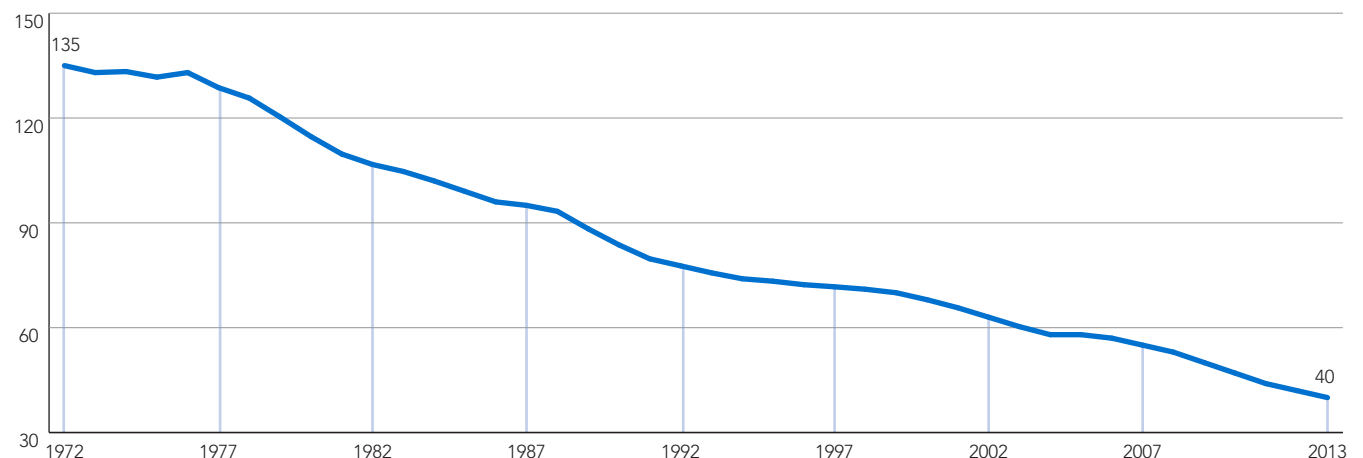
Source: International Institute of Population Sciences, District Level Household and Facility Survey-3 2007-2008.

from that of the capital. With its tall buildings and status as a financial capital, downtown Mumbai can give the feel of a Manhattan in India.

At independence, Kolkata (the Bengali name for Calcutta) became the capital of the new state of West Bengal, while the eastern half of Bengal became East Pakistan and, in 1971, the country of Bangladesh. Part of the reason for Bangladesh's poverty is that it was cut off from Calcutta, the commercial center of Bengal province, leaving its population largely dependent on subsistence agriculture.

FIGURE 7

Infant Mortality Rate, India, 1972-2013



Source: Office of the Registrar General and Census Commissioner, India, Sample Registration System, various issues.

TABLE 6

Urban and Rural Population in India, Each Census, 1901-2011

CENSUS YEAR	URBAN POPULATION	RURAL POPULATION	INTERCENSAL GROWTH OF URBAN POPULATION	POPULATION INTERCENSAL GROWTH OF RURAL	URBAN POPULATION AS PERCENT OF TOTAL
1901	25,854,967	212,541,360	-	-	10.9
1911	25,948,431	226,144,959	93,464	13,603,599	10.3
1921	28,091,299	223,229,914	2,142,868	-2,915,045	11.2
1931	33,462,539	245,514,699	5,371,240	22,284,785	12.0
1941	44,162,191	274,498,389	10,699,652	28,983,690	13.9
1951	62,443,709	298,644,381	18,281,518	24,145,992	17.3
1961	78,936,603	360,298,168	16,492,894	61,653,787	18.0
1971	109,113,977	439,045,675	30,177,374	78,747,507	19.9
1981	159,462,547	523,866,550	50,348,570	84,820,875	23.3
1991	217,611,012	628,691,676	58,148,465	104,825,126	25.7
2001	286,119,689	742,617,747	68,508,677	113,926,071	27.8
2011	377,106,125	833,748,852	90,986,436	91,131,105	31.1

Source: Office of the Registrar General and Census Commissioner General, India, 2011 Census.

Bengaluru (Bangalore) is the capital of Karnataka state, with its gleaming Indian headquarters of such companies as IBM and Intel, and Hyderabad is an important center of the computer industry.

POPULATIONS IN SLUM AREAS

More than 40 million urban Indians lived in areas classified as slums in 2001—a number roughly equal to the population of Spain. Slums (*jhuggis*) are defined as any area designated as such by a state or local government or any “compact area of at least 300 population or about 60 to 70 households of poorly built, congested tenements in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.”²⁰ India conducted a systematic enumeration of the urban slum population for the first time during the 2001 Census slum population (data from 2011 not yet official), showing the slum population at 43 million, or about 15 percent of the national urban population.

The largest slum populations are in major cities: Mumbai (5.2 million); Delhi (1.8 million); Kolkata (1.4 million); Chennai (1.3 million); and Nagpur (0.9 million). By far the largest share of population living in slums is in Mumbai, at 54 percent, followed by Faridabad (46 percent) and Meerut (44 percent), both in the Delhi National Capital Region, and Kolkata (32 percent). Roughly 6 million children under age 7 lived in slums in 2001, with 1.6 million in Maharashtra state alone.

TABLE 7

Indian Metropolitan Areas With 3 Million or More Residents, 2015

METROPOLITAN AREA	STATE	POPULATION (MILLIONS)
Delhi	Delhi	25.7
Mumbai (Bombay)	Maharashtra	21.0
Kolkata (Calcutta)	West Bengal	14.9
Bengaluru (Bangalore)	Karnataka	10.1
Chennai (Madras)	Tamil Nadu	9.9
Hyderabad	Andhra Pradesh	8.9
Ahmadabad	Gujarat	7.3
Pune (Poona)	Maharashtra	5.7
Surat	Gujarat	5.7
Jaipur	Rajasthan	3.5
Lucknow	Uttar Pradesh	3.2
Kanpur	Uttar Pradesh	3.0

Source: United Nations Population Division, World Population Prospects, The 2012 Revision (New York: UN, 2013).

Most inhabitants of slums have moved to the city in hopes of earning some income, no matter how meager. Other slum dwellers may have paying jobs but live in the slums because of a severe shortage of housing. Nearly three-quarters of slum residents are literate (73 percent) compared with 81 percent who are literate among the general population in states reporting slums. Slightly more than one-half of men living in slums were reported in the census as working, compared with 52 percent among the total population. The 2001 census showed that only 12 percent of women living in slums were reported as working, compared with 26 percent among women in the total population of those states.

Slums are by definition illegal, usually situated on a piece of empty government or private land in less desirable locations such as near railways or drainage canals. They may slowly obtain some services, such as electricity and sanitation, and may eventually be annexed as an integral part of the city. In other cases, city governments may remove the slums, relocating residents to the city fringe and allocating 20 to 25 square meters of land per household. These relocated slums often develop into full-scale towns with brick houses and shops. Some slums simply become too large to move and become permanent parts of the city.

Socioeconomic Characteristics

India's society is deeply rooted in religion, language, and tradition. Religion, including disputes among religious and cultural groups, is a fundamental force in Indian life that affects economic and educational disparities, the division of political power, the traditional role of women, and the demographic profile of the country.

At the 2011 Census, Hindus numbered 966 million people, 139 million more than in 2001, and a 17 percent increase since 2001. Muslims had the largest increase of 25 percent, with 172 million people in 2011, an increase of 34 million since 2001. The percentage share of Hindus dropped marginally, from 80.5 to 79.8, while that of Muslims grew to 14.2 from 13.4 in 2001. Although these are relatively small changes in 10 years the sensitivity of the count is emphasized by the fact that the data were ready in January 2014 but have only now been released. The balance is made up of Christians, Sikhs, and others.

Hinduism has been a unifying force throughout India's history, and its many holy days, festivals, and caste system define life for the great majority of Indians. Several other religions with a much smaller share of the population have nevertheless had disproportionate influence. Sikhs, whose religion branched off from Hinduism, are largely local to Punjab state, and are generally credited with turning borderline land into "India's granary." The southern half of the country has had more contact with other cultures over the centuries, and today maintains many Christian schools and institutions, although it is still majority Hindu.

The importance of Hindu traditions is manifested in India's deeply rooted caste system, which continues to play a key role in the organization and stratification of Indian society. The system, which was largely based upon vocational occupation, has four main categories: Brahmin (priests, teachers); Kshatriya (kings, warriors); Vaishya (merchants, landowners, craftsmen); and Sudra (laborers, artisans). The "Untouchables" are the lowest caste. Mahatma Gandhi attempted to remove discrimination against this group by referring to them as Harijans or Children of God. Today, Untouchables are called by the label they themselves prefer, Dalits, or "the oppressed."

The discriminatory aspects of the caste system have been under assault since India's independence in 1947, but the system has been difficult to dislodge, particularly because of its deep roots in ancient Hindu texts, such as the Vedas, and the belief that the creator of the universe, Brahma, also created the four main divisions. Still, the Indian government has attempted to eliminate caste boundaries and to redress the effects of discrimination against the Dalits. In 1947, well before the landmark civil rights laws in the United States, India established a system whereby a share of public employment jobs and university slots were reserved for certain castes of Dalits, the SCs who were recognized only among Hindus and Sikhs. The reservation of jobs and university seats was also extended to STs. STs were not necessarily Hindu associated with a caste, but had a long history of poverty and low education.

While the caste system has not been eliminated, it plays a somewhat reduced role among the educated elite. It is quite common to see the phrase "caste no bar" in advertisements in the matrimonial section of newspapers placed by the parents of prospective brides and grooms who arrange the large share of marriages.

Labor force statistics emphasize the rural nature of the country's population. In 2011, about 55 percent of the labor force was engaged in agriculture. Participation in the labor force was 53 percent for males and 26 percent for females. Of the 332 million male workers, 82 percent worked six months or more per year, with the balance marginal workers who worked less than six months. Of the 150 million female workers, 60 percent worked six months or more, and 40 percent were marginal workers (see Figure 8, page 14).

LITERACY AND EDUCATION

Mass education and high literacy rates are hallmarks of a modern society. In India, the Constitution provides a goal of free and compulsory education through age 14. Literacy is defined as the ability to read and write any language, regardless of level of education. In the census, literacy is based on the response of the person who answers the enumerator's questions, nearly always a male household head. Many researchers assume that the census figures overstate the functional literacy levels of the population.

BOX 2

Urban and Rural Lifestyles

Most Indians live in small villages and have few amenities associated with modern lifestyles (see Figure A). Bartering goods and services is common and much of everyday commerce is missed by official statistics. Among those who use cash, rural residents spend more than one-half of it on food.

India has participated in the communications revolution and the 2011 Census shows that just under two-thirds of urban households have a mobile phone, with rural households not far behind at nearly 50 percent.¹ Despite the growing importance of the computer industry to India's economy, few Indians have access to a computer at home but the proportion is growing. In 2011, 10 percent of Indians in urban areas, and 4 percent in rural areas, had a computer at home without internet. In rural areas, less than 1 percent had an Internet connection, compared to 8 percent in urban areas.

One consumer item that stands out is television with a cable connection, owned by more than three-fourths of urban and one-third of rural households. The news, cricket, religious programming, and game shows are very popular.

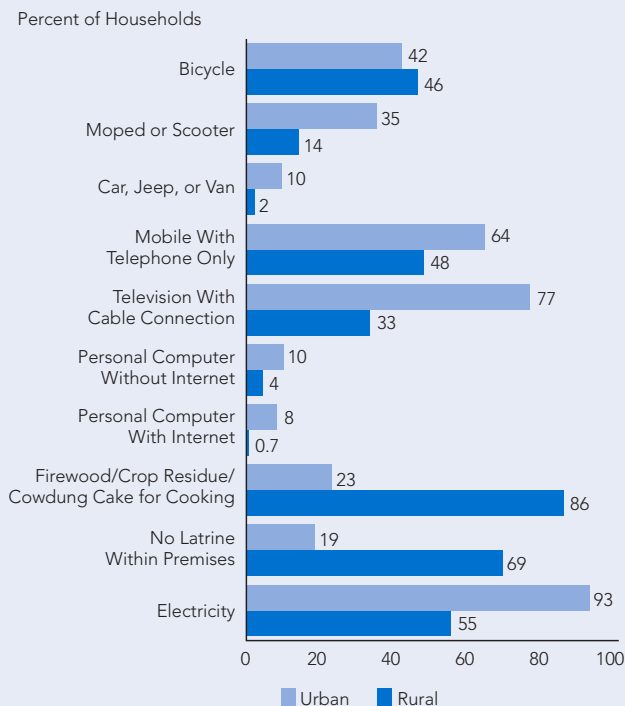
Roughly one-half of households in both rural and urban areas have some means of private transportation, although bicycles predominate. In recent years, an explosion in private vehicles has taken place, but car ownership remains uncommon, especially in rural areas. By 2012, the number of registered cars and vans (including jeeps, used primarily in rural areas) rose to 22 million, up from 6 million in 2000 (see Figure B).² That Delhi's 2.2 million cars represent 10 percent of the nation's total while the state has but 1.4 percent of the country's population illustrates the dominance of the major metropolitan areas in car ownership. A visitor to Delhi would be quite impressed with the number and variety of cars, from small cars such as Maruties to SUVs and a growing number of Mercedes. Greater Mumbai is a distant second in car ownership with 644,000 cars in 2012. The total number of cars per 1,000 population in India, at 15, contrasts sharply with the United States at 627 per 1,000 population. Ownership of motorized two-wheel vehicles, including scooters, has grown more rapidly than four-wheelers from 2011 to 2012 at 12 percent to 11 percent.

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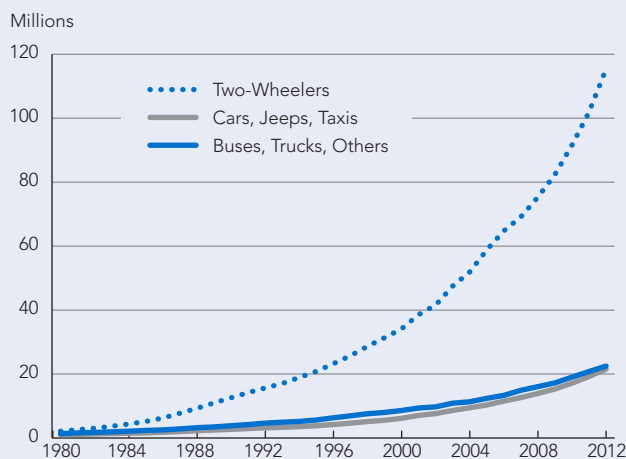
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Figure A. Household Amenities, India, 2011



Source: Office of the Registrar General and Census Commissioner, India, 2011 Census.

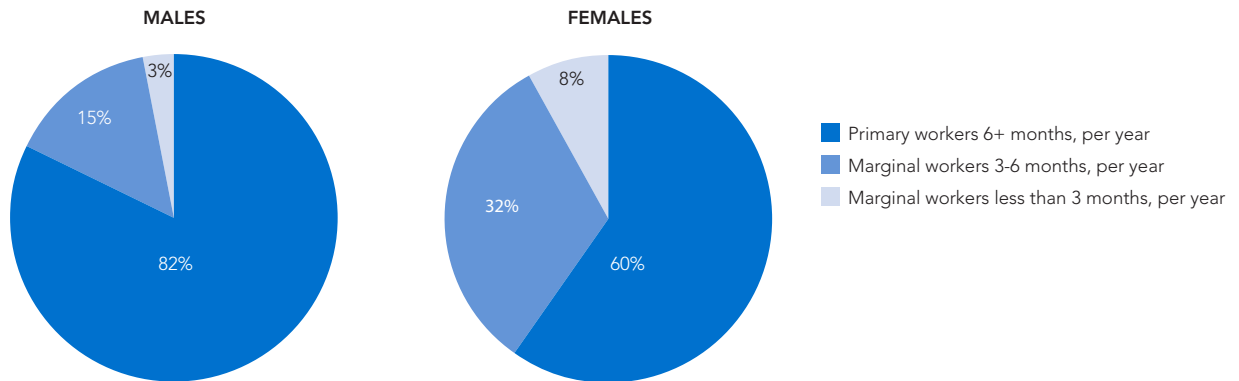
Figure B. Registered Motorized Vehicles by Type, India, 1980-2012



Source: Ministry of Transport and Highways, India, *Road Transport Year Book, 2011-2012*.

FIGURE 8

Workers in India by Type, 2011



Source: Office of the Registrar General and Census Commissioner, India, 2011 Census.

By 2009 India had more than 1.3 million educational institutions, from primary through preuniversity level, more than 7 million teachers, and a student enrollment of 227 million.²¹ Given the magnitude of the effort required, progress in literacy is evident, particularly in the past decade. Between 2001 and 2011 the number of people who were illiterate declined by 22 million, to 273 million. In 2011, the number of people who were literate was 763 million, an increase of 203 million people. Progress is also evident in the continuing decline in the gap between males and females, down to 16 percentage points in 2011 (see Figure 9).

Literacy for both sexes in 2011 was highest in Kerala at 94 percent of the population older than age 6, and lowest in Bihar at 64 percent. Still, Bihar recorded the largest increase among the states in a decade with a gain in the literacy rate of nearly

17 percent. For females, the highest literacy was also in Kerala, 92 percent, and the lowest in a decade was in Rajasthan at 53 percent.

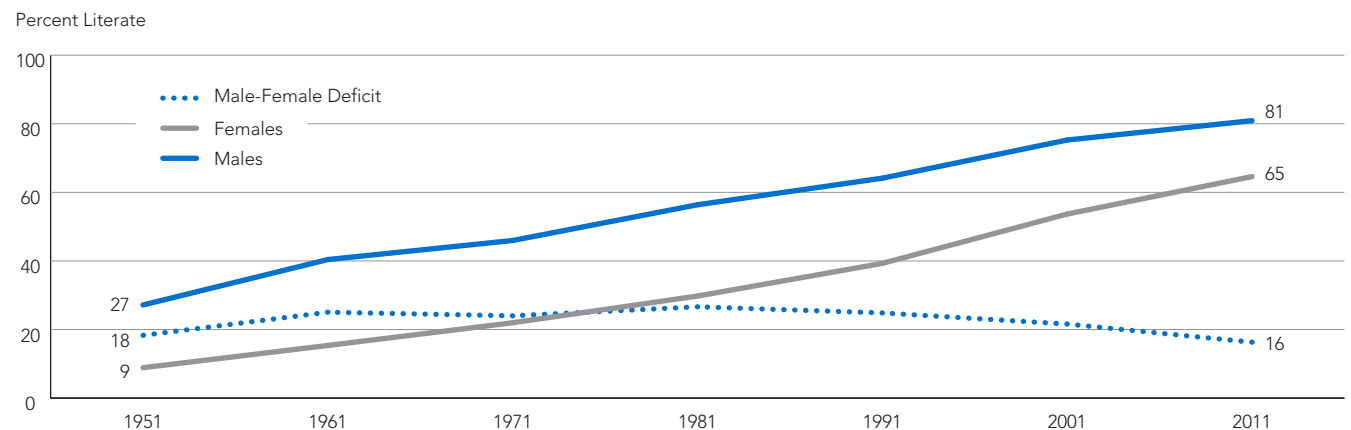
WOMEN’S ROLES AND MARRIAGE

The gender gap in literacy highlights another important aspect of Indian society and tradition: the generally low status of women. India is one of a handful of countries in which the preference for sons over daughters is so intense that some expectant couples will pay for a sonogram to learn the sex of the fetus and abort it if the fetus is female.

Within a family, girls tend to receive less food and medical care than boys, undermining their health and sometimes leading to a premature death. Surveys show that girls are

FIGURE 9

Literacy Reported in Indian Censuses, 1951-2011



Source: Office of the Registrar General and Census Commissioner, India, Censuses of India.

less likely than boys to be immunized against major childhood diseases.²² And, as literacy trends demonstrate, girls are less likely to receive any education. Some of the desire to avoid girl children comes from marriage traditions that call for parents to pay a dowry to a bride's prospective in-laws and the removal of the daughter to another household at marriage. Most Indian marriages are arranged by parents, leaving little choice to the couples themselves.

The practice of dowry was outlawed in 1961 yet it remains widespread and appears to be gaining importance as a status symbol among wealthier Indians. The amount of the dowry can become a contentious issue for a new bride when her in-laws feel she did not bring enough and pressure her to secure more from her parents. Dowry-related violence is a major problem in India and is grossly underreported. In extreme cases, brides are hounded until they commit suicide; or young wives are murdered in suspect "kitchen fires," freeing the husband to seek another bride with a bigger dowry.²³

While the universality of marriage has not changed, age at marriage has been rising. The minimum legal age at marriage is 18 for women and 21 for men. In 1961, about 20 percent of girls ages 10 to 14 and 71 percent of young women ages 15 to 19 were already married. By 2011, a remarkable social transformation had taken place. The rate for 10-to-14-year-olds had dropped to 3 percent and the rate for the 15-to-19 age group had fallen to 20 percent.²⁴

Because rising age at marriage is associated with lower fertility, this social change likely plays a role in India's declining birth rate. On the other hand, increased longevity also results in fewer women being widowed at younger ages, exposing them to the risk of pregnancy for longer periods. The Hindu prohibition against the remarriage of widows has also been relaxed.

India's Future Population

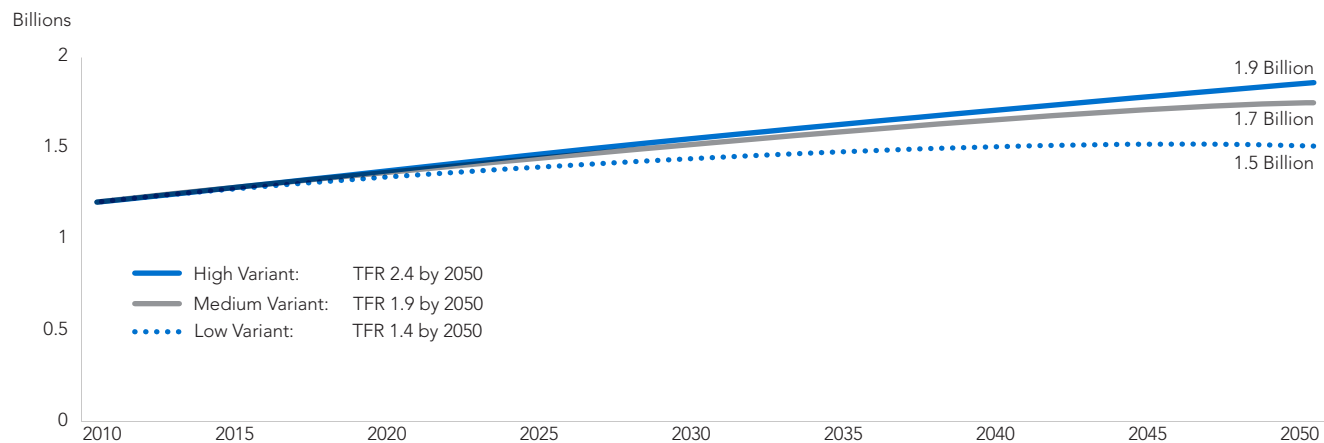
India's future population size will largely depend upon the course of the birth rate, particularly in the heavily populated northern states. United Nations 2015 projections provide one basis for considering India's population future. The Low Variant shows India's population growing from 1.3 billion at present to 1.5 billion in 2050 (see Figure 10). This projection, however, makes the assumption that the country's total fertility rate will quickly decline to 2.1 children per woman in the period between 2015 and 2020 and, from there, to 1.4 in 2050. A fertility decline of that magnitude would be rather difficult for India and it is doubtful the government would want such a scenario. In Kerala, citizens have already called for a rise in their low TFR, for fear of European-like fertility. The Medium Variant assumes that a TFR of 2.1 would be reached by 2025 to 2030 and continue to decline to 1.9 by 2050, resulting in a 2050 population of 1.7 billion people. Judging by the current trend in the TFR, that scenario is plausible, depending upon the level at which the fertility decline levels off in the large higher-fertility states. Finally, the High Variant assumes that the TFR of 2.6 in 2010 to 2015 would decline to 2.4 in 2050. This scenario shows the Indian population at 1.9 billion in 2050.

Conclusion

India is a complex country. A visitor to Delhi or Bangalore might leave with the impression that India is on track to become a middle-class country with a lifestyle familiar to anyone in the West. But India remains an essentially rural country steeped in centuries-old social and religious traditions. Still, its progress on many fronts has been remarkable, if uneven, particularly in light of its large population. Agricultural production quadrupled during the "Green Revolution," so that famines have become a thing of the past. Nonetheless, almost 50 percent of its children

FIGURE 10

India's Population Projected to 2050, Three Scenarios



Source: United Nations Population Division, *World Population Prospects, The 2015 Revision* (New York: UN, 2015).

are malnourished. The expansion of the health care system has raised life expectancy at birth to 68 years in 2009/2013 from less than 40 in 1950. But less than half of births were attended by skilled health personnel in 2005-2006.

During the 20th century, India made real progress against disease and hunger. The population of one-quarter billion in 1900 expanded to 1 billion people in 2000. Slowing population growth was a national priority from the nation's beginning and India can count many successes in that effort. But India's social diversity has resulted in different demographic situations from location to location. As one travels north from highly-educated Kerala to the Hindi Belt, fertility levels rise. Success in one area has not been matched by success in others.

Will the "two-child family" concept take hold throughout the entire country? In the years since the last *Population Bulletin* on India was written in 2006, the answer seems increasingly positive. Among the larger states fertility now ranges from 1.6 to 3.4 children. At the national level, it is clear that replacement fertility will soon be reached. Will other factors such as the preference for sons and deeply-rooted family traditions work against the two-child family in many parts of the country? Only time will answer this question.

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INDIA APPROACHES REPLACEMENT FERTILITY

This *Population Bulletin* updates a previous *Bulletin* from 2006, *India's Population Reality: Reconciling Change and Tradition*. India's population (currently at 1.3 billion) will exceed China's before 2025 to make India the world's most populous country. India's annual increase of about 19 million people contributes more to the annual world population growth of about 89 million than any other country.

However, the most recent population data shows a country headed for replacement level fertility—albeit, with notable regional differences in fertility trends.

As we mentioned in 2006, India is a country of diverse ethnic, linguistic, geographic, religious, and demographic features. We also described India then as “a collection of many countries held together by a common destiny and a successful democracy.” And, despite its emerging economic power and multiple megacities, Indian life remains largely rooted in its villages. Indeed, we argue in this *Bulletin* that deep-rooted cultural traditions will have a bearing on the ability of different regions of the country to reach replacement level fertility.

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