

STATUS OF DEMOGRAPHIC DIVIDEND IN INDIA- A CRITICAL ANALYSIS

Haloi Dr. Dipanjali, Barman Dr. Rajesh Deb

¹Department of Economics, Pandu College, Ghy-781012, Assam, India

²Department of Commerce, Bodoland University, Kokrajhar, Assam, India

E-mail: haloi.dipanjali2010@gmail.com¹, rajesh.barman19@gmail.com²

Received: 14 March 2020 Revised and Accepted: 8 July 2020

ABSTRACT: The United Nations Population Fund (UNFPA) defines Demographic Dividend as “the economic growth potential that can result from shifts in a population’s age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of population (14 and younger, and 65 and older)”. It is stated by UNFPA that a country with both increasing number of young people and declining fertility has the potential to reap a demographic dividend. The high growth of population in India, which has been considered as an important cause for slow economic growth of the country has experienced some rapid demographic change. Now a day, the change in demographic scenario in India has been considered more optimistically. The rapid fall in the birth rate has added fewer children to the population. According to the 2011 Census, the growth rate of 0 to 6 years population is negative (-0.3% per annum), thus a larger group of population will be moving towards the economically active group (aged 15 to 64 years). Thus, economic growth potential has increased in India. This paper examines some of the demographic change in India. It also discusses whether the current demographic dividend can be considered as an engine of growth. It also makes a study of the population age structure of some major states of India. Secondary data will be used for carry out the study. The study is carried out on secondary data viz., Census of India, Sample Registration System, working papers, papers published in different journal. Different Websites are explored for finding out information. Data are analysed by using table, graphs, diagrams etc. Population Pyramids are constructed by using excel.

KEY WORDS: Demographic dividend, Economic growth, Youth Population

I. INTRODUCTION

Demographic dividend as defined by the United Nation Population Fund (UNFPA) as “the economic growth potential that can result from shifts in a population’s age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of population (14 and younger, and 65 and older). This bulge in working ages yields the demographic dividend, a situation in which the working age population is well over 60% and dependency ration is low (Kulkarni, 2014). An increasing proportion of population in the working age group provides an opportunity to reap the “Demographic Dividend” (Bloom, Canning, and Sevilla, 2003), through increase in the number of potential workers and an accelerated accumulation of capital due to reduced spending on dependants.

Bloom et al. (2009) find that economic growth in China and India between 1980 and 2000 was mainly due to increasing productivity, in large part because of the shift from agriculture to industry and services, but that increases in the proportion of the population that is of working age and in labour force participation rates contributed significantly as well. Study done by Aiyar and Mody (2011) on Indian states found demographic change than the economic reform policies as the prime reason for accelerated economic development during the post reform period and on the basis of their estimation, the demographic dividend will boost India's economic growth substantially in the coming two decades. The percentage of working-age population is more in China than in India since the mid 1970s. The percentage of the population that is of working age in India is expected to crest around 2030—the same year that India will surpass China on this statistic—and then decline very slowly, reflecting an expectation of decreasing fertility. It is important to note that this decline in India will be very gradual, compared with a much steeper rate of decline in China. The difference between the two countries in the percentage of the population that is of working age is currently at its maximum (73.4 percent in China, 64.6 percent in India). Another indicator of the overall shift in balance between the two countries is that the total number of people of working age in India is projected to overtake that of China in 2028 (Wolf et al, 2011).

As per the available Sample Registration System Data, there has been gradual decline in the share of population in the age group of 0-14 from 41.2 percent to 38.1 percent during 1971 to 1981 and 36.3 to 27.0 percent during 1991 to 2016, whereas, proportion of economically active population (15 -59 years) has increased from 53.4% to 56.3 % during 1971 to 1981 and 57.7 to 64.7% during 1991 to 2016. On account of better education, health facilities and increase in life expectancy, the percentage of elderly population (60+) has gone up from 5.3 to 5.7 percent and 6.0 to 8.3 percent respectively during the periods under reference. This change in demographic scenario in India has been considered more optimistically. The rapid fall in the birth rate has added fewer children to the population. According to the 2011 Census, the growth rate of 0 to 6 years population is negative (-0.3% per annum), thus a larger group of population will be moving towards the economically active group (aged 15 to 64 years). Thus, economic growth potential has increased in India.

Acharya Shankar (2004) studied the growth prospect of Indian economy depending on the relatively young population, coupled with declining fertility which ensures rapidly growing labour force and declining dependency ratio. When we talk about the demographic dividend we are concerned about the supply side of the labour. The additional labour supply offers the potential for employment and growth. What about the demand side of labour in the economy? In a well functioning economy with competitive product and factor markets labour demand would match supply and lead to more job and output. But there is no guarantee of such happy happenings. Acharya (2004) cited that between 1993-94 and 1999-2000 the Indian economy grew at over 6.5 per cent per year. But, according to the Tenth Plan, employment grew hardly 1 per cent per annum. This was a period when the labour force was growing at over 2 per cent a year and there was a large backlog of underemployment and unemployment. The rigid labour laws which effectively convert labour from a variable to a fixed factor of production are found one of the important causes.

Another important component of demographic dividend is the capital (Acharya Sankar, 2004). It is the working population (aged 15-65 years) who save more. As the estimation and projection of population in India shows a bigger fraction of population in the working age group, it predicts a higher savings in the future. Lower dependency ratio along higher saving rate will lead to a rapid growth of capital stocks and correspondingly higher growth of GDP.

II. OBJECTIVES OF THE STUDY:

1. On the basis of the above background this paper will examine some of the demographic and economic changes (development indicators) in India over the years.
2. It will also discuss whether the current demographic dividend can be considered as an engine of growth.

III. METHODOLOGY:

The study is carried out on secondary data viz., Census of India, Sample Registration System, working papers, papers published in different journal. Different Websites are explored for finding out information. Data are analysed by using table, graphs, diagrams etc. Population Pyramids are constructed by using excel.

IV. RESULTS AND DISCUSSION

We analyse some of the development indicators of the Indian economy viz., annual growth rate of population, birth rate, death rate, growth of GDP, infant mortality rate, life expectancy at birth for male and female respectively and literacy rate from 1901 to 2011. Fig-1 shows the trend of birth rate and death rate and annual growth rate of population. Both birth rate and death rate were very high in 1901. In 2011, both rates were almost similar. After 1911, both the rates declined gradually. However, because of advancement in medical facilities, control of epidemics like plague, small pox, TB and malaria, gradual increase in the process of urbanisation specially from 1991 (In 1911, hardly 10.3% of population lived in urban areas which went up to 26 % in 1991 and 27.8% in 2001) which ensures better health hygiene and sanitation, increase in mean age of marriage, female education etc., rate of decline in death rate is more than the rate of decline in birth rate specially up to 1981 which increase the gap between birth rate and death rate. Since 1981, rates of reduction of birth rate are found more than the rates of reduction of death rate which gradually narrow down the gap. This experience of Indian economy resembles the demographic transition theory of population. The theory of demographic transition shows the relationship between birth rate and death rate with economic development and a country has to face with different stages (4 stages) of population growth. At present, India is at the third stage of demographic transition as birth rate declined more rapidly as compared to death rate.

The growth rate of population curve shows increasing growth rate from 1901 to 1981 except the year 1921. The economy experienced negative growth rate of population in 2021 due to more deaths (about 17 million people

died due to Spanish Flu). After that, the economy experienced an alarming rate of population growth till 1991 growth due rapidly declining death rate and slow declining birth rate. The growth rate remained at the peak of more than 2% per year between the 1961 and 1991 census periods. Such rapid growth in population was considered to reflect the dismal picture of the family planning programme adopted by the country in the early 1950s (James K.S., 2011). Another important reason for this high growth of population is heavy influx of population from neighbouring countries. It is after 1991, the rate population growth had started declining as the birth rate started to decline more than the death rate. Although the growth rate has declined compared with the previous decade, the annual addition to the population remained nearly the same (James K.S., 2011). The 2017 Revision of World Population prospects (25th round of official UN population estimates and prospects), published by the United Nations Department of Economic and Social Affairs, said that currently China with 1.41 billion inhabitants and India with 1.34 billion remain the two most populous countries, comprising 19 and 18 percent of the total global population. The report said that around 2024, the population of India is expected to surpass that of China. According to the population projection released by United Nations Population Division, 2010, the ultimate size of India's population when population stabilisation is achieved will be about 1.72 billion around 2060.

Table-1

Demographic and Economic Change in India, Census Year 2001-2011

Year	Annual % Growth Rate of Population	Birth Rate	Death Rate	Growth of GDP	Infant Mortality Rate	Life Expectancy at Birth		Literacy rate
						Male	Female	
1901	0.30	49.2	42.6		210			5.4
1911	0.56	48.1	47.2	2.1	204	23.3	22.6	5.9
1921	-0.03	46.2	36.3	-0.8	219	20.9	19.4	7.2
1931	1.06	45.2	31.2	2.3	174	26.6	26.9	9.5
1941	1.34	39.9	27.4	0.8	161	31.4	32.1	16.1
1951	1.26	40.9	22.8	-0.5	146	31.7	32.4	18.33
1961	1.98	40.0	17.6	3.7	129	40.6	41.9	28.3
1971	2.20	37.8	15.4	3.3	110	44.7	46.4	34.45
1981	2.22	34.0	13.0	3.5	92	54.7	54.1	43.57
1991	2.14	30.0	10.0	5.4	75	60.9	59.7	52.21
2001	1.93	26.0	9.0	6.2	70	61.8	60.4	64.83
2011	1.16	21.8	7.1	6.6	44	65.8	68.33	74.04

Source: Census, India

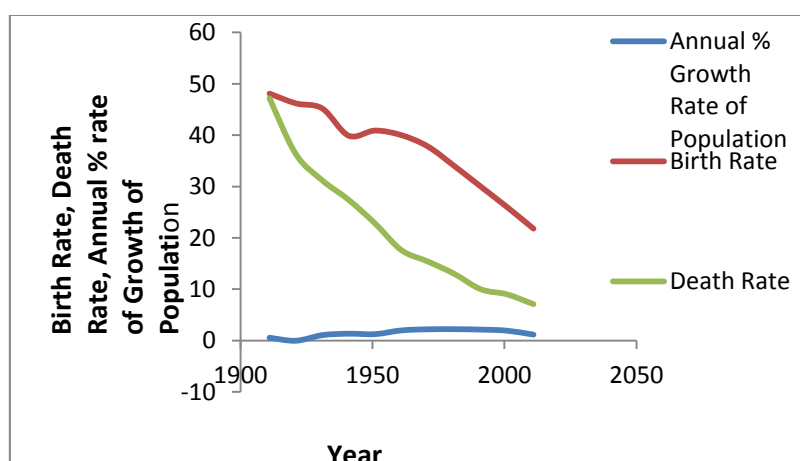


Fig-1. Birth Rate, Death Rate and Annual % Growth Rate of Population

Gross Domestic Product¹ (GDP) which measures the overall economic performance of an economy shows a rising trend in India over the period from 1901 to 2011. However, there were up and down of rates of growth of GDP from 1911 to 1991. It is after the major economic reform in 1991 the economy is continuously facing

upward growth rate of GDP. Infant Mortality Rate (IMR) shows a declining trend except the year 1921. In 1921, economy experienced very high IMR of 219. Thereafter, IMR has continuously declined which reflects better socio-economic development of the economy.

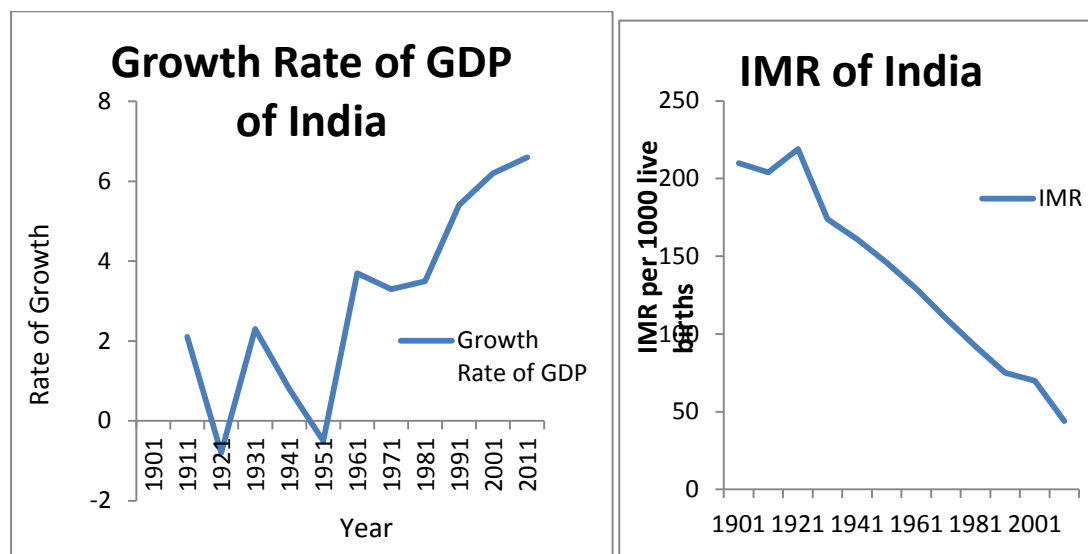


Fig-1

Fig-2

The life expectancy at birth for both male and female and literacy rate shows increasing trends over the years.

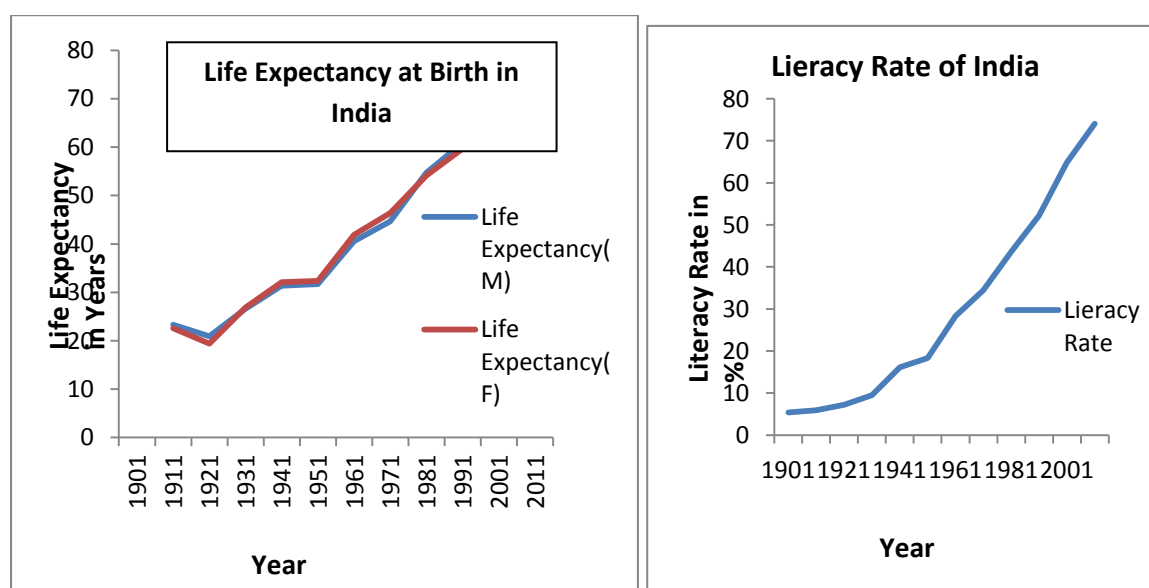


Fig-3

Fig-4

Objective 2:

Over the years, the age structure of India's population has been changing. The age distribution has shifted towards middle ages, with fall in the share of child population and corresponding rise in the share of adults. Dividing the total population into three major age groups (i.e. age in years 0-14, 15-59 and 60 and above) it has been observed that the proportion of population in the younger age-groups (0-14 years) has dropped sharply after 1971, and accordingly the proportion of population in the working-age-group (15-59 years) and the aged (60 years and above) has shown a tendency to increase. The proportion of population in the 0-14 age group which was 41.1 percent in 1971 dropped to about 35.3 percent in 2001 and further to 29.5 in 2011 (SRS Statistical Report, 2011). While the proportion of elderly population (60 years and above) which was about 5.5 percent during 1971 rose sharply to 7.5 percent in 2001. According to SRS, Statistical Report, it further rose to 8.0 in 2011.

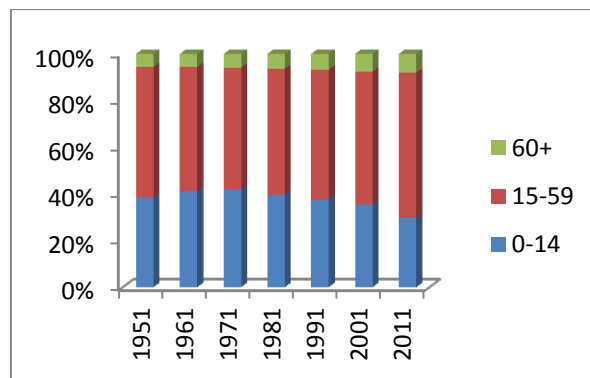
Table: 2

Percentage Distribution of population by Broad Age Group, India Since 1951

Year	Age Group			
	0-14	15-59	60+	Total
1951	38.4	56.1	5.5	100
1961	41.1	53.3	5.6	100
1971	42.0	52.0	6.0	100
1981	39.7	53.9	6.4	100
1991	37.6	55.7	6.7	100
2001	35.3	56.9	7.5	100
2011	29.5	62.5	8.0	100

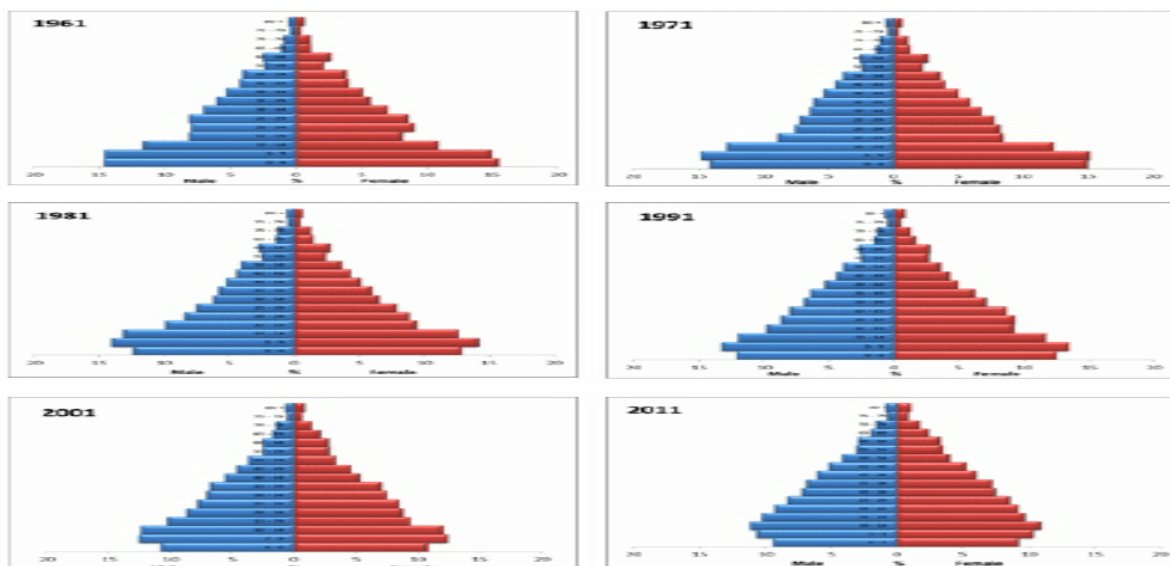
Source: Census of India, SRS (Sample Registration System), Statistical Report 2011

Fig-5 Trends in Broad Age Distribution, 1951-2011



Population pyramids (fig-6) over the years depicts that some interesting results. While the population pyramid of India, 1961, 1971 show no demographic dividend, population pyramid of 2011 clearly shows the emergence of demographic dividend in India. As per the projection made by Kulkarni (2014), there will be high demographic dividend in India by 2031 which will be passing out by 2051.

Fig-6 Population Pyramid of India



Source: https://www.researchgate.net/figure/Population-Pyramid-India-1961-2011_fig1_279940861

From the study of trends of age composition in India, it is cleared that the country as a whole is experiencing demographic dividend. But this experience is not uniform all over the states. We have chosen five states of India to know about the variations in sex-age composition of population. Kerala, a developed state with respect to literacy rate (94.65%, Census, India), Infant Mortality Rate, Maternal Mortality Rate; Uttar Pradesh (most populous state, experiences high fertility rate), Orissa (low State Domestic Product, 32.59 % of people below poverty line); Punjab (less income inequality) and Assam (Maternal Mortality Rate highest in India).

Table-3

Sex Wise Age Composition of Population of India, 2011

Age-group	India		Assam		Kerala		Uttar Pradesh		Orissa		Punjab	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0-4	9.44	9.25	10.2	10.34	7.79	6.94	10.29	10.27	8.88	8.57	7.87	7.52
5-9	10.68	10.36	11.34	11.39	8.14	7.21	12.79	12.49	9.86%	9.61%	8.91%	8.15%
10-14	11.18	10.81	11.23%	11.16%	8.99%	7.97%	13.20%	12.89%	10.42%	10.36%	9.89%	8.70%
15-19	10.30	9.66	10.02%	9.66%	8.30%	7.39%	11.88%	11.35%	9.33%	9.43%	10.74%	9.53%
20-24	9.27	9.20	8.89%	9.79%	8.11%	7.87%	9.08%	8.64%	8.85%	9.24%	10.03%	10.02%
25-29	8.27	8.55	8.75%	9.32%	7.52%	8.06%	7.21%	7.52%	8.38%	8.70%	8.69%	9.12%
30-34	7.19	7.50	7.37%	7.58%	7.05%	7.65%	6.21%	6.90%	7.29%	7.54%	7.41%	7.90%
35-39	6.91	7.21	7.24%	7.25%	7.26%	8.17%	6.18%	6.51%	7.23%	7.35%	6.92%	7.48%
40-44	6.05	5.96	6.06%	5.67%	6.98%	7.46%	5.21%	5.11%	6.56%	6.30%	6.22%	6.72%
45-49	5.18	5.15	5.31%	4.91%	6.91%	7.16%	4.23%	4.30%	5.73%	5.42%	5.60%	5.88%
50-54	4.16	3.97	4.03%	3.61%	5.82%	5.74%	3.45%	3.19%	4.53%	4.30%	4.54%	4.52%
55-59	3.13	3.36	2.88%	2.61%	5.38%	5.07%	2.53%	3.00%	3.52%	3.57%	3.32%	3.60%
60-64	3.01	3.24	2.48%	2.50%	4.28%	4.20%	2.87%	2.89%	3.49%	3.56%	3.30%	3.93%
65-69	2.08	2.31	1.59%	1.64%	2.87%	3.13%	1.89%	1.99%	2.31%	2.37%	2.55%	2.65%
70-74	1.55	1.63	1.23%	1.24%	2.04%	2.34%	1.48%	1.37%	1.80%	1.87%	1.86%	1.84%
75-79	0.72	0.81	0.61%	0.58%	1.30%	1.69%	0.62%	0.65%	0.87%	0.88%	0.89%	0.97%
80+	0.85	1.03	0.71%	0.76%	1.28%	1.94%	0.90%	0.93%	0.97%	0.93%	1.27%	1.48%

Source: Census, 2011

Table-4 shows that Punjab, Kerala, Orissa and Assam experience more than 60% male and female population respectively in the working age group. However, Uttar Pradesh still has not achieved this percentage. If we compare the percentage of both male and female population in the age group 0-14 and 60 and above which represent dependant population with respect to working age population, Uttar Pradesh experiences highest dependency ratio. Again, Kerala experiences highest aging population.

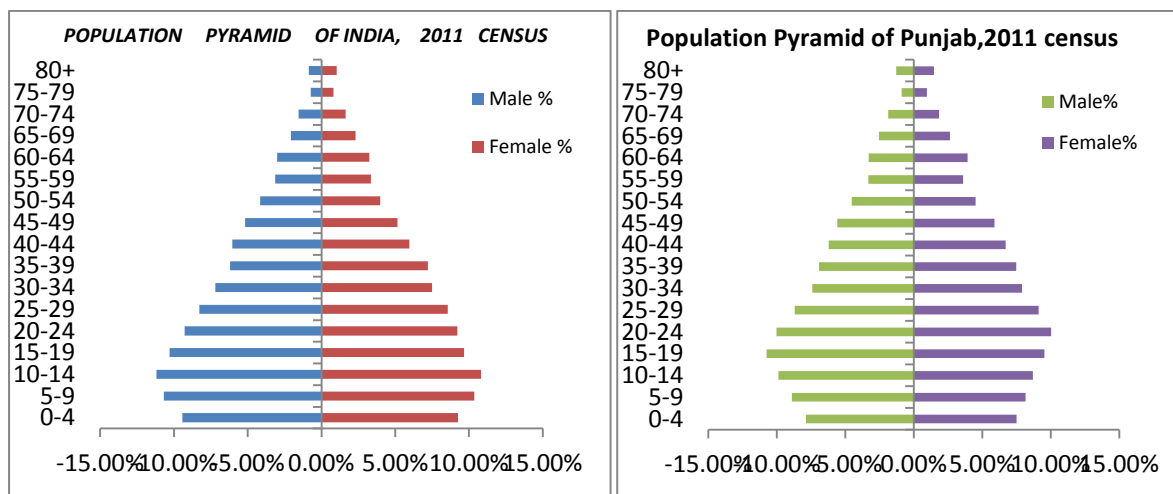
Table-4

Age-Sex Distribution of Population among Selected States

Age-group	India		Assam		Kerala		Uttar Pradesh		Orissa		Punjab	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0-14	31.30	30.42	32.84	32.89	24.92	22.13	36.28	35.65	29.16	28.54	26.66	24.36
15-60	60.47	60.57	60.54	60.40	63.32	64.57	55.96	56.52	61.41	61.85	63.46	64.77
15-65	63.48	63.81	63.02	62.90	67.59	68.77	58.83	59.41	64.90	65.40	66.76	68.70
60 and above	8.23	9.01	6.62	6.71	11.77	13.30	7.76	7.83	9.43	9.61	9.88	10.87
65 and above	5.21	5.78	4.14	4.21	7.49	9.10	4.89	4.93	5.94	6.06	6.58	6.94

Source: Census India, 2011

Population pyramids of different states shows percentage of male and female distribution with respect to different age group. Analysis of different pyramids indicates the emergence of demographic dividend in Punjab, Kerala, Orissa and Assam with varying degree. Uttar Pradesh will also experience in near future. However, population dividend will be passing out in Kerala



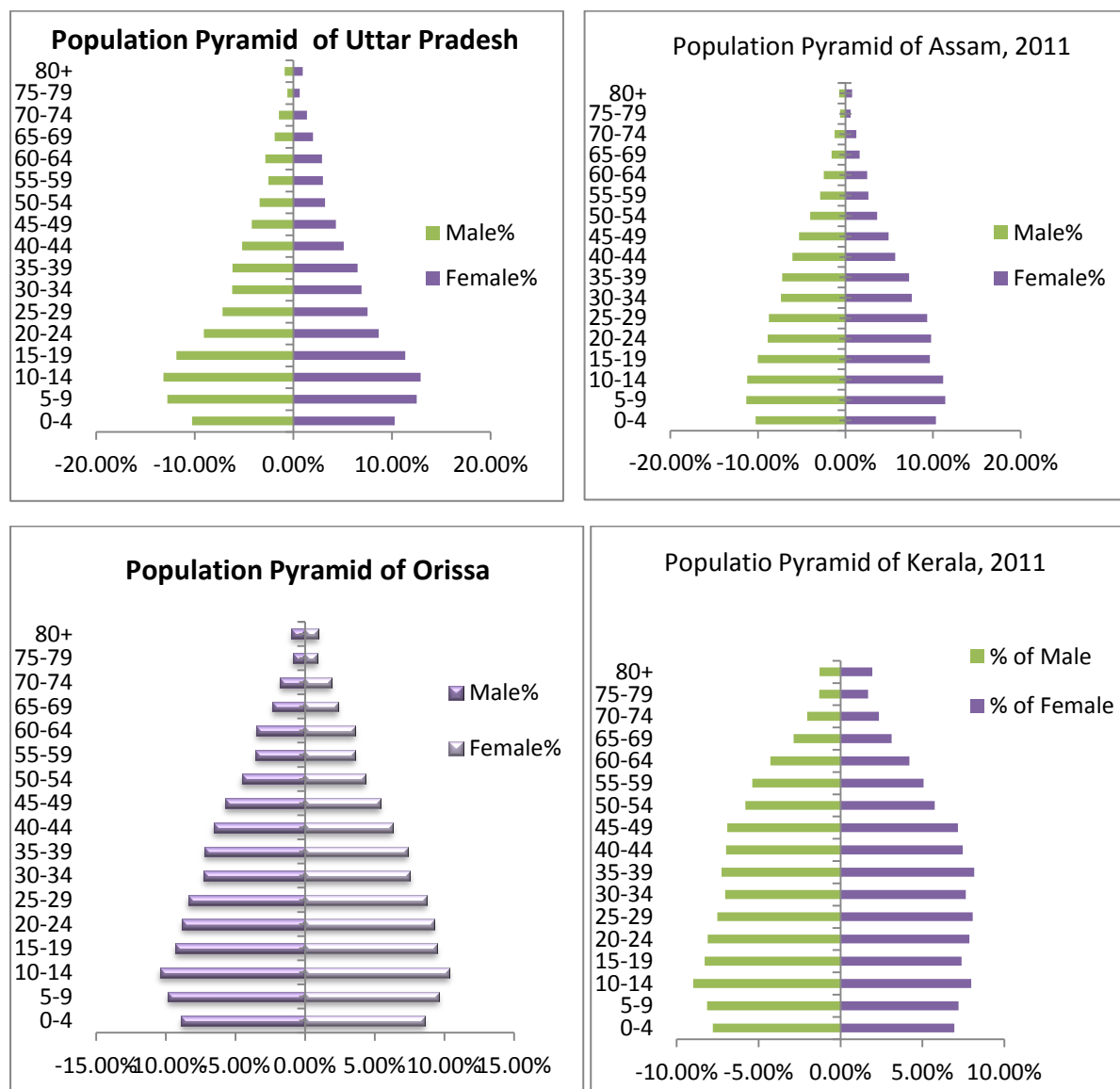


Fig-8

Demographic Dividend and Economic Growth

Although there is a general appreciation of the existence of demographic opportunity, whether the country will be able to harness the dividend is open to debate and is of considerable interest. The concerns arise mainly from three important factors. Many authors argue that there is nothing automatic about the links between demographic change and economic growth. Rather, fruits of demographic dividend are crucially determined by the policy environment and in particular good governance, carefully constructed trade policy for capturing the economic benefits, and sound macroeconomic management (Bloom et al, 2011). Contrary to this, a study carried out at the state level found that the prime reason for India's accelerated economic growth is demographic changes as compared with the economic reform policies. The authors argued that on the basis of their estimation, the demographic dividend will boost India's economic growth substantially in the coming two decades (Aiyar and Mody, 2011).

Second, India still has considerable educational deficits; particularly among the adult population. The adult literacy rate is still quite low. According to Census 2011 results, only 74% of the population 7 years and older are literate, with a female literacy rate as low as 65%. Because of the high illiteracy rate and poor quality of education in the past, a large majority of the adult working age population are inadequately prepared for the modern economy. Scholars have argued that the demographic changes are insufficient to provide an upward thrust to the rate of economic growth because of the deficits in the area of education and health, ultimately resulting in a waste of demographic advantage (Chandrasekhar et al, 2006). The employability of the vast

majority of the people with zero or negligible level of education has been a matter of concern, and therefore India's demographic dividend would turn out to be a liability (Chandrasekhar et al, 2006). The changing demographic dynamics also pose an increasing challenge to the educational sector in the country. Although the older cohorts in India largely remained illiterate (with an illiteracy level of nearly 40% for those aged 15 years and above in 2001), considerable changes are taking place among younger cohorts. Many Indian states have already achieved universal primary enrolment, and some are currently approaching it. At the same time, there are larger concerns about the quality of school education in India. Another serious concern is the lack of sufficient infrastructure in higher education. At present, only -10% of the students pursue higher education, which is significantly below the developing country average of 20%. Inevitably, demographic changes are likely to create considerable pressure on the Indian educational system, for which the country needs to prepare at the earliest.

At the same time, studies also point out that the fertility transition and the consequent decline in dependency ratio have an independent effect on economic growth irrespective of the level of education (Aiyar and Modi, 2011, James, 2008). This is partly because fertility transition augments household savings and enhances the household's investment in quality education for children. The evidence in India has been highly positive with regard to savings (James, 2008), particularly in states with faster declines in fertility, and to some extent with the enhanced investment in education (Bhat, 2002).

Third, there also exists considerable unemployment and under employment in different parts of the country. It is generally accepted that if India is able to employ productively the booming adult population, India's economic growth would accelerate (Bloom et al, 2011). Female unemployment in the state of Kerala with its higher educational progress and demographic changes has been startling and has raised serious questions on the ability of the nation to provide employment opportunities to the huge adult population (Zachariah, 2004). According to the Census 2001 results, only 15% of the women in Kerala are engaged in productive work, which is one of the lowest among Indian states. The concern has been whether India possesses the capacity to productively employ the increasing adult population in order to take full advantage of the demographic dividend.

However, available statistical estimates on the impact of demographic changes on the economic growth in India has clearly brought out that those states achieving fertility transition are also able to enhance their per-capita income growth substantially (Aiyer and Modi, 2011; James, 2008). Thus, there seems to be lack of concordance between statistical estimates and general economic writing as far as India's demographic dividend is concerned. Perhaps, the dividend that accelerates per-capita income growth emanates primarily from the faster decline in fertility in the country, even with moderate educational achievements. But once India is able to enhance its educational potential, improve its policy environment, and provide female employment, the demographic dividend opportunity can be improved further. At the same time, it appears that the state-level heterogeneity in demographic dividend has large implications for the economic inequality in the country. The available evidences suggest an increasing trend in spatial inequality the ability of the nation to provide employment opportunities to the huge adult population (Pal et al, 2007).

V. CONCLUSION:

India's demographic dividend is likely to continue for the next few decades as more and more states, particularly the northern belt, experience rapid fertility transition. The age structure changes have great potential for rapid economic growth. The demographic dividend can be enhanced further if policy-makers take note of the areas of concern, particularly educational improvement and providing jobs for women (Desai, 2010). Undoubtedly, beyond the 2030s, India's demographic structure is likely to alter from a young to an aging population. The 60-years-and-older population is expected to triple in the next four decades from 92 million to 316 million, constituting 20% of the population by the middle of the century (Bloom, 2011). Nevertheless, for the time being, as the proportion of the aged remains relatively low, the country's economic advantage from the demographic bonus is likely to continue.

VI. REFERENCES

- [1] C. P. Chandrasekhar, J. Ghosh, A. Roychowdhury, *Econ. Polit Wkly.* 41, 5055 (2006).
- [2] D. E. Bloom, D. Canning, L. Rosenberg, in *Reshaping Tomorrow: Is South Asia Ready for the Big Leap?* E. Ghani, Ed. (Oxford Univ. Press, Oxford, 2011).
- [3] D. E. Bloom, *Curr. Hist* 110, 143 (2011).
- [4] K.S. James (2011), "India's Demographic Change: Opportunities and Challenges" *Science*, New Series, Vol. 333, No. 6042 (29 July 2011), pp. 576-580 Published by: American Association for the Advancement of Science Stable URL: <https://www.jstor.org/stable/27978340>

- [5] S. Aiyar, A. Mody, "The Demographic Dividend: Evidence from the Indian States," IMF Working Paper, no. 11/38 (International Monetary Fund, New York, 2011); available at www.imf.org/external/pubs/ft/wp/2011/wp1138.pdf.
- [6] S. James, *Econ. Polit Wkly.* 43, 63 (2008).
- [7] United Nations, *World Population Prospects: The 2010 Revision* (United Nations Population Division, Department of Economic and Social Affairs, New York, 2011); available at <http://esa.un.org/unpd/wpp/index.htm>
- [8] Kulkarni P.M. (2014), "Demographic transition in India" Office of the Registrar General of India
- [9] https://www.researchgate.net/figure/Population-Pyramid-India-1961-2011_fig1_279940861 accessed on 11/01/2019.
- [10] K. C. Zachariah, S. Irudaya Rajan, "Gulf Revisited" Working Paper No. 363 (Centre for Development Studies, Thiruvananthapuram, 2004); available at www.cds.edu.
- [11] Maternal Mortality Ratio, NITI Ayog, <https://niti.gov.in> accessed on 12/01/2019
- [12] List of Indian states and union territories by poverty rate, <https://en.m.wikipedia.org> accessed on 12.01/2019
- [13] P. N. Mari Bhat, *World Dev.* 30, 1791 (2002).
- [14] P. Pal, J. Ghosh, "Inequality in India: A survey of recent trends," DESA Working Paper no. 45 (Department of Economic and Social Affairs, United Nations, New York, 2007); available at www.un.org/esa/desa/papers/2007/wp45_2007.pdf.
- [15] S. Desai, *Econ. Polit Wkly.* 45, 12 (2010)