

# A Demographic Comparison of India and China

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## Abstract

Demography is an important concept which needs special attention as the population which has the ability to take the economy to commanding heights, can disturb the social fabrics of the nation if left unattended. As both India and China are the most populous countries in the world analysing their demographic trends revealed that both of them are currently facing contrasting situations. Whereby India is going to surpass China with its share of working age population around 2025, the same in China had been on decline since 2010 and is creating the problem of population ageing. Thus suggesting that both of them need to take a toll on their current situations and create suitable conditions before it's too late.

**Keywords:** China, Demographic Window of Opportunity, India, Population Ageing.

## Introduction

To keep an eye on the demographic patterns is what today's economies are engaged into. Demography is a systematic study of human population and various trends associated with it i.e. births, deaths, migration, population size and age structures which are subject to transform overtime, as indicated by the structural changes. The theory of Demographic transition as propounded by Warren Thompson in 1929 provides an over view of the relation between population growth and economic development. It explains fall in birth rates and death rates from a pre determined high level as economies alter their agrarian structure to industrial societies. This demographic transition transforms the age structure of the population whereby it offers a demographic window of opportunity in which the share of working age population commonly taken as 15-64 (15-59 in India) is higher than the share of dependents who are considered as non working age groups i.e. those between 0-14 and 65 years and older. Since transition is a dynamic process, this window may not be available for a long time (Jadhav, 2009, p.12) Soon it turns into a demographic liability whereby the share of elderly people (old age dependents) starts rising. Thereby presenting a demanding situation which needs immediate concern. Thus, the main of this study is to make a comparative analysis of the economy of India and China, the two most populous countries of the world with regard to their placement in demographic transition process particularly focussing on demographic dividend and demographic burden.

## Review of Literature

Chandrasekhar, Ghosh & Roychowdhury (2006) gave an account of the demographic patterns of India and stated that India entered the phase of demographic dividend in 1970s but the situation in terms of employment, literacy rates, gender disparities and health status warrants attention before the same becomes a liability for India.

Jadhav (2009) gave an account of the process of demographic transition which leads an economy through the stages of demographic dividend and demographic nightmare. He analysed India's position in HDI along with the status of education quality, quantity, affordability and employability and concluded that education and skill building needs serious attention, with special focus on marginalised and disadvantageous section of the society.

Chen and Liu (2009) discussed about the demographic patterns in China which declined overtime due to implementation of family planning programmes, but speeded up the ageing process. This initiated major challenge for the Chinese government towards addressing the problem of health care and old age security system in rural and urban areas. Finally, suggestions were given to deal with the challenging task of supporting the

elderly by creating conditions which could reap the second demographic dividend.

Cai (2010) established a link between demographic transition, demographic dividend and Lewis turning point with respect to the economy of China. Empirically a reverse U shaped relation was found between total fertility rate and annual GDP growth of a panel of countries for the period 1960 onwards. The study examined the demographic patterns and hence supported the argument that demographic dividend had been diminishing in China and Lewis turning point is about to happen.

Singh (2012) studied China's demographic patterns and stated that China is known for its two unique population trends i.e. sharp decline in fertility in relatively short period of time and a sharp increase in mortality rates along with a jump in fertility rates due to Great Leap Forward Famine. The study concluded that China's demographic window is soon closing down as working population will decline and this would pose serious challenges in terms of rise in share of older population raising strain on pension and health care system.

Singh (2016) examined the assumptions of the demographic dividend hypothesis in India and concluded that India's performance in all the aspects namely education, employment, workforce participation rates and health status is very low which casts doubts on the optimism regarding benefits of working age population. Heterogeneity exists in different states with regard to demographic patterns and future trends revealed that half of the working age population would settle down in eight poor states but the quality of human resources and policy environment in these states pose serious constraints towards future growth prospects.

#### **Research Gap**

No comprehensive study has been carried out to compare the performance of Indian and Chinese economy with respect to their demographic scenario's focussing on both present and future trends.

#### **Objectives of the Study**

1. To get a conceptual understanding of demographic dividend and demographic burden.
2. To compare the current demographic trends in India and China along with throwing light on future projections.

#### **Data Sources and Methodology**

The present study is purely based on secondary data.

#### **Demographic Dividend vs Demographic burden**

Most historical economists had different views regarding population growth. Malthus (1798) and Ricardo considered population growth to have detrimental effects on economic development and on the other side Adam Smith (1776), Lewis (1951), Nurkse (1954) regarded it to be an important source of capital formation, as rightly understood by the words of Adam Smith (as cited in Jhingan, 2011, p.415) "The annual labour of every nation is the fund which originally supply it with all the necessaries and conveniences of life." It has been well stated by the historical economists Kuznets (1966) and Chenery

and Syrquin (1975) that overtime an economy develops the demographic patterns also undergoes a change leading to fall in death rate, birth rate and decline in family size as children tend to lose their economic importance and child quality gets substituted in place of quantity. It is well known that as demographic transition takes place, age structures also tend to transform. As economies embark on the path of development, fall in birth rates lags behind fall in death rate (due to better nutrition and medical facilities) which leads to population bulge. Birth rates tend to decline at a later stage and recently economists have started taking into account microeconomic factors to explain the desired changes in fertility rate or demand for children (Todaro and Smith, 2012). It considers the following equation –

$$D_c = f(Y, P_c)$$

$D_c$  = demand for children / fertility rates

$Y$  = Household income

$P_c$  = net price of children ( as the different between costs i.e. opportunity cost of mother's time and actual cost of educating children and benefits i.e. due to potential support by children in family labour and financial support in the old age)

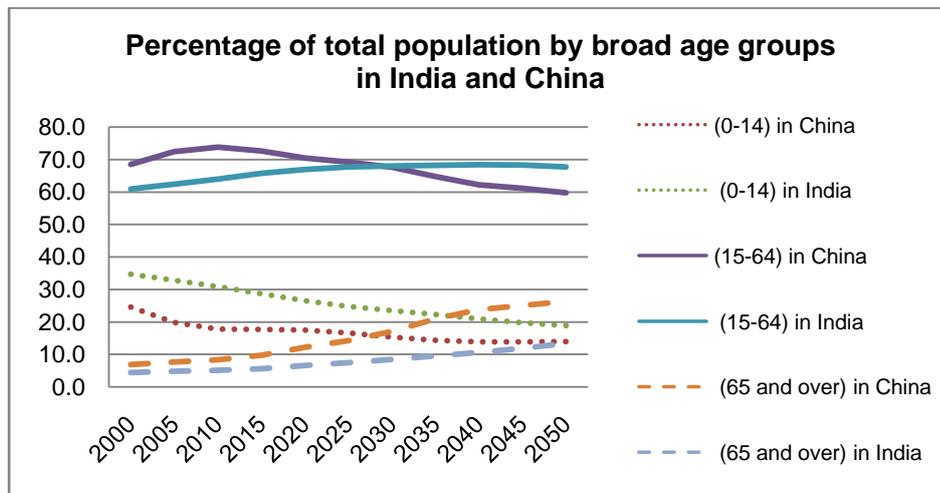
Initially when a country is in a backward stage fertility rates are high because people are not educated and they generally consider more children to have a direct relation with their increased income sources and old age support. Thus, one would expect that overtime when household income increases the demand for children initially rises because more children are seen as a helping hand to the family thus providing financial aid. But with further increase in household income, cost-benefit analysis comes into consideration which states that as with development if sufficient employment opportunities are available for women then they will tend to spend their maximum time in earning a comfortable livelihood as against rearing children. Because in this case opportunity cost of mother's time rises i.e. she will have to forgo her earnings if child's quantity is given importance. Therefore if a person is bit educated he/she realises that it involves more money to raise a child and it is only after a particular age that children start earning income for the family which is also not a continuous source. "And with increase in gainful employment opportunities for women with simultaneous rise in cost of children through foregone earnings and school fees in that case the family tend to substitute child quality i.e. healthy and educated children against child quantity" (Bloom, Canning and Sevilla, 2003). Thereby it is necessary for a woman to become financially independent and enlarge their educational outlook which will make them capable to take their own decisions. And with rise in income it becomes possible to impart sufficient nutritional levels to their children which leads to decline in mortality rates and hence ultimately fertility rates because now less number of children will be desired to maintain the targeted number as surviving rates rises. Thus, the population bulge which initially occurred was a burden on the society in terms of increased child dependency ratio but later on it pushes up the growth rate of the economy when the young join the workforce. This

gain in growth rate is popularly called the demographic dividend (Singh, 2016). Since demography is a dynamic process, this window of opportunity is not available for long and soon starts closing down as with further decline in fertility rates and increased life expectancy the demographic dividend grows old and retires. With this the disproportionate number of older people tends to rely on too few children to support them thereby turning the demographic dividend into a demographic burden.

“First, there are many young people, who need to be fed, clothed, housed, cared for medically,

and educated. Then, they become adults who are more likely to spend only part of the income they generate on their own needs. The rest is used to provide for children or is saved, most often for retirement. Finally, there is a large cohort of elderly people, who work less—or not at all—and become “dependent” again. They either live off their own savings or are supported by their families or the state” (Bloom, Canning and Sevilla, 2003). This correctly explains the transition from demographic dividend to demographic burden.

**Figure 1 United Nations, Department of Economic and Social Affairs, Population Division (2017) World Population Prospects.**



**Demographic patterns in India and China**

“Both India and China are the only countries in the world with populations of more than 1 billion” (Wolf et al., 2011). As previously stated, the age structures of the population tend to transform overtime and hence are likely to affect economic growth. Regarding this aspect, analysis of India and China with respect to their specific age structures is mandatory. It can be inferred from fig 1. that the proportion of population in younger age group i.e. 0-14 has declined drastically in China because of its one child policy which was implemented in 1979 so as to control the increasing population and in India the same lags behind China though it is declining slowly. It prevented 250 to 300 million births since its commencement until 2000 and around 400 million births from 1979 to 2011 (Singh,2012). This reduction in total fertility rate allowed China to enjoy the benefits of demographic dividend upto 2010 whereafter it has started to declined whereas in India the percentage of the population that is of working age is expected to crest around 2030 the same year that India will surpass China on this statistic (Wolf et al.,2010) . The sharp decline in fertily rates in China had resulted in the problem of population ageing as China’s statistic in this parameter in 2015 stood at 9.7 percent and will quickly climb to around 13.7 per cent in 2025 and will constitute almost a quarter of its population by 2050 ( Chen and Liu, 2009).Whereas in India the old age

population will not be a problem atleast for coming decades. Thereby the trends depict that China is currently facing the problem of population ageing as the proportion of this group is increasing rapidly to reach at 26.3 percent in 2050. In this regard Banister, Bloom and Rosenberg, 2010 stated that “The fertility level dropped in half in less than a decade, population growth was reduced to a more manageable level, and the process of the aging of China’s population structure began”. And India is supposed to enjoy the benefits of demographic dividends because of the rise in its share of working age population which is expected to increase upto 2035-40 whereafter it will start declining slowly. “The share of the working-age population in India is expected to remain above 65 per cent until 2050 “(Singh,2016).

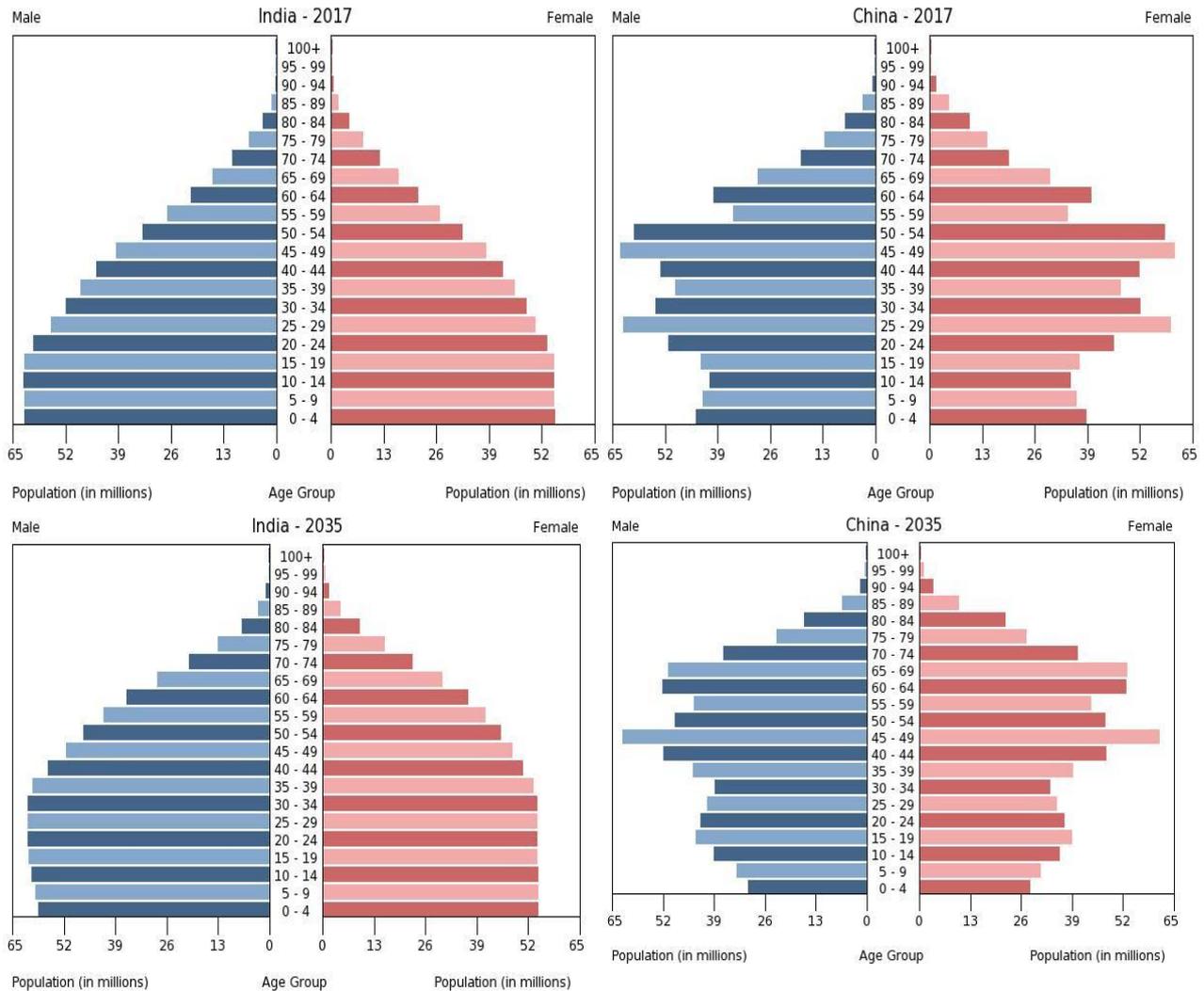
**Population Pyramids**

Population pyramids as depicted in Fig.2 tend to give a picture regarding the trends of age structure and sex distribution across various age groups. Thus the population pyramids for both India and China for the year 2017 and 2050 tend to support the earlier arguments. India is going through a phase of demographic gift whereby the base of the pyramid 0-4 tend to shrink and bars above the age 20 tend to become wide, thus depicting an increase in working age population in the coming years which is likely to create a strong impulse for economic growth. “On the other hand China is currently facing the

repercussions of one child policy because of which the decline in fertility rates would not have been so drastic” (Chen and Liu , 2009 ) ultimately resulting in demographic burden. As depicted through the pyramid shapes of 2017 and 2035 the bars above the

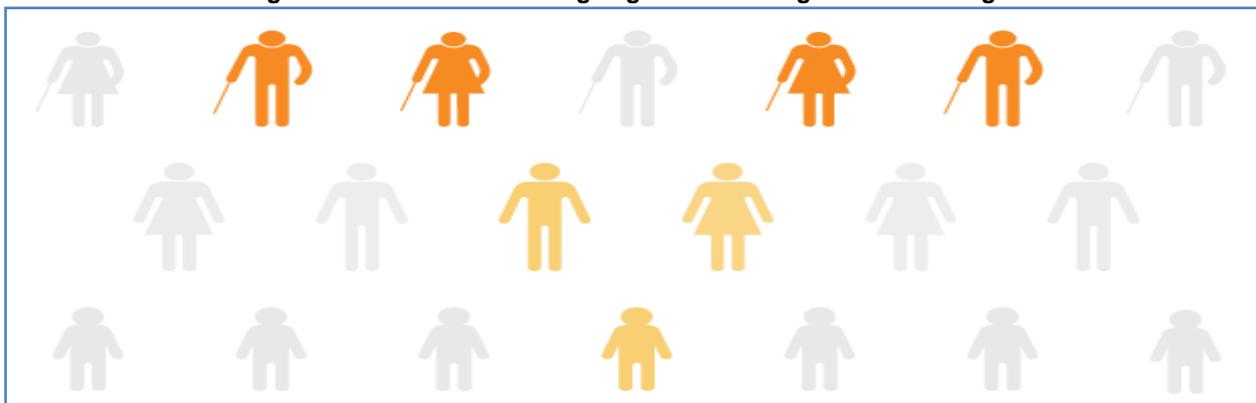
age 60 tend to converge out and become wide. The demographic trends reveal that both India and China are currently facing different situations which are likely to pose various challenges in the future.

**Figure 2 Source: US census Bureau International Database, 2017**



It is often stated that as demographic transition takes place overtime and the economy passes through the phase of demographic dividend it is likely to incur several advantages As far as India is concerned it can be summed up by the views as stated in Economic Survey 2012-13 , p.26 ,“More working age will mean more workers, especially in the productive age groups, more incomes, more savings, more capital per worker, and more growth. Also because demographic change is associated with fertility declines, the transition period may be accompanied by greater female participation in the labour force.” Thereby it states that positive changes in terms of increase labour supply, female work force participation rates, increased savings and most importantly substitution of child’s quantity with better health and educational outcomes tend to accompany

as economies pass through the phase of demographic dividend. No doubt this phase is an inevitable process but if suitable conditions are not created so as to reap the benefits of demographic dividend then the same can turn into a disaster. If the population is given sufficient opportunities to showcase their talents and enjoy a comfortable way of life then we can see that ‘India should not be seen as a country of one billion people, but one billion minds ‘ who if given a chance can take an economy on a high growth trajectory process provided necessary educational, health and employment opportunities accompany. And if the same billion minds sit idle without any work than they can create atmosphere of social unrest in the country, thereby turning the demographic dividend into demographic nightmare (Jadhav, 2009). Thus, to quote in the words of Bloom:

**Figure 3. BBC News Asia – Ageing China : Changes and Challenges**

“Demography is not destiny; growth of the working-age share of the population does not automatically lead to an acceleration of economic growth. Demographic change may provide a boost to economic growth, but appropriate policies are needed to allow this to happen. Without such policies, a country may instead find itself with large numbers of unemployed or underemployed working-age individuals. This scenario would be a “demographic disaster”, instead of a demographic dividend, in some instances promoting state fragility and failure, potentially with adverse political, social, economic, and ecological spillovers to other countries” ( Bloom , 2011 , p.6)

But India’s performance in terms of education is deplorable as indicated by Jadhav , 2009 in terms of “ education access , quality ,affordability and employability” whereby the marginalised sections of the society don’t have access to proper education . Also employability and affordability conditions are worse as the cost structure due to privatisation of education is really high, which is out of the reach of the large section of the population. Even in terms of employability, skill mismatch between the requisite skills demanded and supplied is tolling on as in an IT company a student had to undergo training for few months, before he becomes potentially viable for the job (Jadhav, 2009). Some few highlights by Annual Status of Education Report (Rural) , 2017 indicates that “ the proportion of enrolment in standard VIIIth had doubled in past few decades , but only half of them could solve a standard VIth problem “ , thereby raising doubts on the quality of education being provided. As many complete elementary education but lack the requisite foundational skills which are the stepping stones for the future. Even in terms of health indicators the situation is worse as wide inter state disparities exists in backward states and there is shortage of public health measures in rural areas where prevalence of malnutrition is high. As the economic development takes place ,people living in cities are typically exposed to greater pollution levels and stress. And this may result in prevalence of chronic diseases such as hypertension and diabetes which if left unchecked will pose serious threats for India’s future economic and physical well-being ( Wolf et al. , 2011).

Now taking the perspective towards China indicating that the population ageing problem in China is likely to pose serious challenges for the Chinese economy in future. As the Chinese government adopted the “ later , longer and fewer campaign “ and one child policy in 1978 , though it resulted in preventing millions of births but the same had led to decline in family size whereby there will be very less children to support the elderly as stated by the 4-2-1 problem in figure 3. Taking a hypothetical example to explain the situation of 4-2-1 i.e. suppose there were two couples which resulted in procreation of two children due to restrictions on number of children per family. The two children when reach their child bearing age could themselves have only one child and by this time the two couples enter the old age resulting in 4-2-1 problem. “ Meaning four grandparents, two married persons (one couple) and one child will become increasingly common, making it difficult for children to provide adequate support to rest of the family members in need ”( Chen and Liu , 2009). The same had also resulted in imbalances in sex ratio in China as due to restrictions sex selective abortions and pre natal sex determination became common which resulted in large preferences towards boy as against girls. Thereby these imbalances had resulted in “ missing bride” problem whereby brides may be imported from other countries. The resulting population ageing problem is going to impose serious challenges for China in future as China which is known as the factory of the world shall face shortages in terms of labor whereby less people will enter the working age resulting in decline of economic growth.

#### **Conclusion**

The above demographic patterns in India and China revealed that both of them are currently facing contrasting situations whereby India is in the process to be called the youngest nation in the world by 2020 and China on the other hand is getting old. It is indeed stated that for India in order to reap the benefits of demographic dividend certain conditions in terms of healthy population , educational outcomes and sufficient employment opportunities are necessary which if unattended may result in demographic disaster . On the other hand , China needs to look after its ageing population by expanding health measures and pension facilities. The

reserachers even recommend that raising the retirement age in China will be of great help as the old age people can themselves support their financial issues instead of relying on traditional family values which are itself on decline. Therefore as remarked by Desjardins , "While this shift in global demographics is going to be extremely difficult to deal with for China, there is optimism that increasing levels of automation and the emergence of artificial intelligence will help make up for any shortfalls.

#### References

1. *Annual status of Education Report (Rural), 2017. (ASER). New Delhi: ASER Centre.*
2. Banister, Judith, David E. Bloom, and Larry Rosenberg (2012) "Population aging and economic growth in China." *The Chinese Economy. Palgrave Macmillan, London, 114-149.*
3. *BBC News Asia – Ageing China : Changes and Challenges , September 20 , 12. Retrieved from <http://www.bbc.com/news/world-asia-19630110>.*
4. Bloom, David, David Canning, and Jaypee Sevilla (2003) *The demographic dividend: A new perspective on the economic consequences of population change. Rand Corporation.*
5. Bloom, David E. (2011), "Population dynamics in India and implications for economic growth." *St. Gallen, Switzerland: WDA-Forum, University of St. Gallen.*
6. Chandrasekhar, C.P.; Gosh, Jayanti; Roychowdhury, Anamitra (2006). "The 'Demographic Dividend' and Young India' S Economic Future." *Economic and Political Weekly*, pp. 5055–64, doi: 10.2307/4419004.
7. Chen, Feinian, and Guangya Liu. "Population aging in China (2009)." *International handbook of population aging. Springer, Dordrecht, pp.157-172.*
8. Chenery, H. and Syrquin M.( 1975) ,*Patterns of development 1950-1970, London: Oxford University Press.*
9. *Chandrasekaran Memorial Lecture delivered by Narendra Jadhav, Member, Planning Commission, Government of India, New Delhi, on 30th October 2009 at IIPS, on "Demographic Dividend and Demographic Nightmare". Retrieved from <http://iipsindia.org/pdf/dr.narendrac.chandra-uploading.pdf>.*
10. Desjardins , Jeff "Animation (2017) : Comparing China vs. India Population Pyramids" , *Visual Capitalist Retrieved from <http://www.visualcapitalist.com/animation-comparing-china-vs-india-population-pyramids/>.*
11. Fang, Cai (2010) "Demographic Transition, Demographic Dividend, and Lewis Turning Point in China [J]." *Economic Research Journal 4, pp. 4-13.*
12. Kuznets, S. (1966), *Modern Economic Growth: Rate, Structure and Spread: an adaptation. Bombay: Vakils*
13. *Ministry of Finance (2013), Economic survey 2012–13. New Delhi: Economic Affairs Division, Government of India.*
14. Singh, Ajit Kumar (2016), "India's Demographic Dividend: A Sceptical Look." *Indian Journal of Human Development 10 (1), pp. 10-26.*
15. Singh, Teshu (2012) "Demographic dividend in China: the challenge ahead." *Institute of Peace and Conflict Studies (IPCS) Special Report 121.*
16. Todaro, Michael P., and Stephen C. Smith (2012) "Economic development." *Pearson Publications.*
17. Jhingan, M.L (2011) .*The Economics of Development and Planning. Delhi: Vrinda Publications (P) Ltd.*
18. *United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects.*
19. *US census Bureau International Database, 2017.*
20. Wolf, Charles, et al. (2011), "Population Trends in China and India: Demographic Dividend or Demographic Drag?" *China and India, 2025: A Comparative Assessment, RAND Corporation, Santa Monica, CA; Arlington, VA; Pittsburgh, PA, pp. 7–36. JSTOR, [www.jstor.org/stable/10.7249/mg1009osd.10](http://www.jstor.org/stable/10.7249/mg1009osd.10).*