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### RESEARCH ARTICLE

#### DEMOGRAPHIC DIVIDEND OR DEMOGRAPHIC DISASTER: COMPARISON WITH CHINA AND LESSONS FOR INDIA

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#### Abstract

India 2023 has overtaken China in terms of population. It is the only economy in the world which is going through a demographic dividend. From the 1980s onwards, China took full advantage of the independent workforce and developed a range of products that effectively and efficiently used this valuable resource. It is India's turn now to take advantage and this, it could do by encouraging labour-intensive technology in small manufacturing enterprises and self-employment.

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#### Introduction:-

The population of an economy is an extremely important source of input in a production function. The use of this important resource can help in increasing the productive activity of an economy and thus increase its GDP manifold. For populous economies like China and India where there is a huge amount of labour force, an effective use of this resource becomes an imperative need. When it started developing in the 1980s, China used this resource efficiently to eventually become one of the world's fastest-growing economies. India today, is in a similar situation where it has a huge amount of independent population. The policymakers in India have to use this resource efficiently such that it results in a demographic dividend. If it is not effectively and efficiently utilized, it could result in a demographic disaster. The government has to implement effective policies such that this abundant resource could be utilized for its gain.

#### Theory Of Demographic Transition And Its Impact On The Growth Prospects Of The Economy

There are two important theories of demographic transition:

1. Malthus's Theory of Population
2. Theory of Demographic Transition

The first theory was propounded by Malthus who stated that population would grow at a geometric rate and food would grow at an arithmetic rate. This meant that eventually, the population would outstrip the food produced, leading to the population always existing at the subsistence level. This is also the time when Karl Marx and Engels propounded their theory of socialism. The theory in simple terms stated that to avoid poverty and subsistence-level existence, all factors of production should be in the hands of the government. This is contrary to capitalism whereby; the factors of production are owned by the citizens of the country. In the socialist model, what to produce, how to produce and for whom to produce, is decided by the government. Whereas the same question in a capitalist economy is answered by market forces.

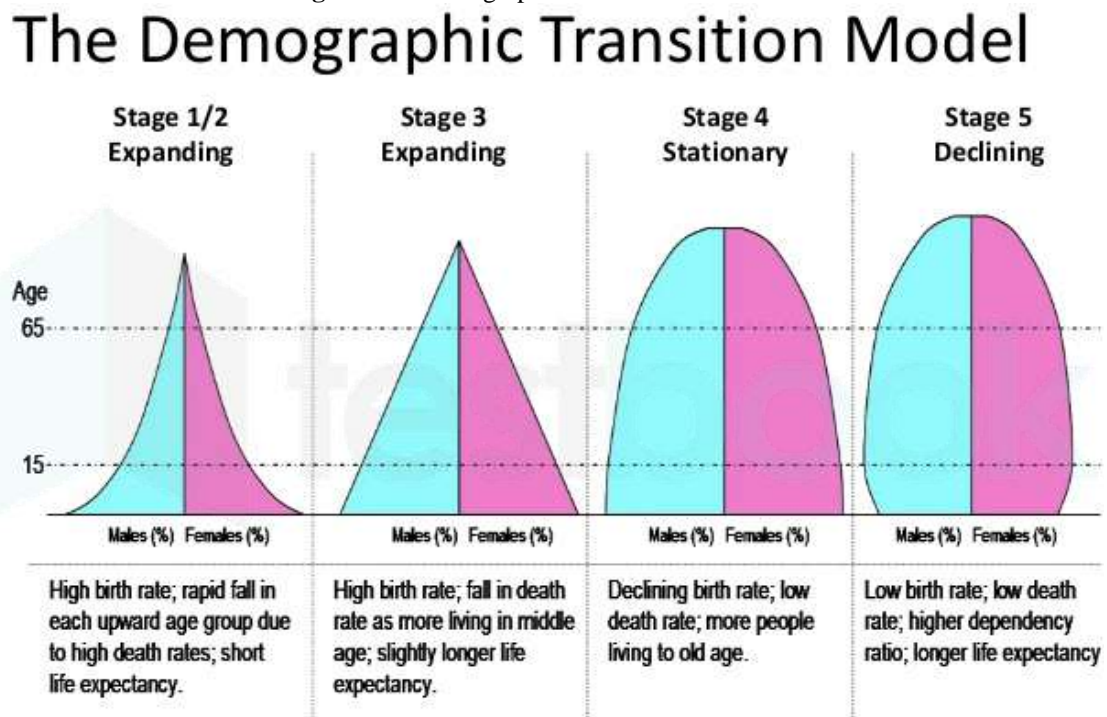
Such a theory did not prove to be analytically correct when applied to actual figures. No economy reached the arithmetic and geometric rate of progression concerning food and population. But what occurred was that certain countries of the world decided to follow the socialist pattern of governance.

The second theory, the theory of demographic transition was accepted both in the form of a theory as well as in reality. This theory states that the first stage that a country enters is one of a high birth rate and high death rate. At this point, the rate of growth of the population in an economy hardly increases as the number of people who are born is almost the same as those who die.

The second stage is one where countries experience high birth rates but low death rates. This is primarily because medical facilities have developed and spread amongst the citizens in an economy, resulting in a drastic decline in the death rate. The birth rate continues to be high for the same reasons that existed in the first stage namely: that the family expects only a few children to survive, large family means larger hands to work on the land, resulting in higher income for the family.

The third stage involves a low birth rate and low death rate. This is largely indicative of a developed economy. In some emerging economies the rate of growth of population is minimal while in certain developed economies like the Scandinavian countries, the birth rate is less than the death rate, encouraging the economies, to invite migration.

**Fig 1:- The Demographic Transition Model.**



Source: google images.

Depending on whether the economy is a labour surplus or a capital surplus, the production function should utilise effectively and efficiently the resources that are abundantly available in the country. China and India are two of the most populous countries in the world and it would be prudent for them to use their abundant resource namely, labour.

How this is utilised will depend upon the

1. Governance of the economy
2. An efficient mix of the basic resources: labour and capital via a production function.

### Theories Of Production

There are different theories of production which can be amalgamated and would then result in an effective mix of labour and capital. The economy would choose amongst the various available production functions depending upon the abundant resource.

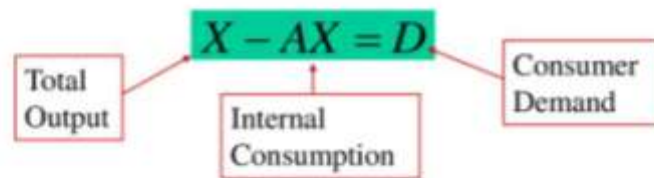
### The Leontief Model

The Leontief model refers to an input-output model which divides the economy into sectors where each sector produces goods and services not only for itself but also for other sectors indicating the interdependency between sectors. Leontief indicated this production function as an input-output matrix. He first states the interdependency in a closed model where no exports or imports are allowed. Everything that is required is produced within the economy and it is a very simple economy with three sectors namely: food, shelter and clothing. The other model is an open model which is more realistic and it indicates that the economy not only satisfies each other's needs but also outside demands. **The basic assumption of what is produced is consumed remains constant.**

**Fig 2:-** Tabular Representation of the Leontief Input-Output Model.

## Leontief Input – Output Model

In a Leontief input – output model, the matrix equation giving the net output of goods and services needed to satisfy consumer demand is:



The solution to the equation is:  $X = (I - A)^{-1} D$

Which gives the amount of goods and services that must be produced to satisfy consumer demand.

Source: google images.

This model was used in the Chinese context in the inter-regional input-output modelling. It used representative commodities to indicate inter-regional commodity flows or primary industries. It also took into account the decreasing transportation costs of manufacturing sectors as these industries were set up close to the source of raw materials. The Chinese used Township and village enterprises (TVEs) which absorbed surplus labour from the agricultural sector leading to rural economic growth, increased rural income and reduced the rural-urban gap. The non-material industry did not necessarily have to be positioned in any area as it did not require any particular raw material. The Leontief model is the best fit for a command economy though it has been adapted to suit other types of economies as well.

### Cobb Douglas Production Function

The Cobb-Douglas Production Function states the technological relationship between two or more inputs, the four major inputs that are commonly considered are land, labour, capital, and entrepreneurship. Normally the production function is stated to be a relationship between land and labour. The other two inputs are assumed to be known.

$f(L, K) =$

$$Y = AL^{\alpha}K^{\beta},$$

where  $Y$  = output which is a function of labour ( $L$ ) and capital ( $K$ ), and  $A$  is the total factor productivity which is assumed to be constant. Alpha represents the output elasticity of labour and Beta represents the output elasticity of capital and if  $\alpha + \beta = 1$ , this represents the constant returns to the scale function. This function used statistics in the Chinese industrial sector for labour for the period 2005- 2010 and it indicated that the state-owned enterprises, as well as the non-domestic enterprises, paid more than the living wage but the domestic private enterprises paid much less.

### Impact On A Labour Surplus Economy

Though the above models indicate a fair enough idea of how labour and capital are effectively utilized for production. It is the wages that one earns outside of the agriculture market that would determine whether one would leave

agriculture for employment in the manufacturing sector. Between 1978 and 1982 approximately 80 million rural workers in China entered the rural collective industrial sector. As one can see the emphasis is that the agricultural labourers move to a job within the rural sector. This means that the economy focused on the development of the rural industrial sector.

With the migration of labor from the agricultural sector to the industrial sector at no point in time was there a reduction in the farm output. The household has the facility to reallocate their services among activities which depend upon gender and age composition, as well as the wages that are available in the manufacturing sector.

India has now overtaken China as the most populous economy, with approximately 45% of its population dependent on the agricultural sector. It is essential that for this excess labour to move out of agriculture, they need to be gainfully employed within the rural industrial sector.

### **Efficient Use Of Labour In A Command Economy Like China**

China's GDP increased tremendously due to higher industrial production and manufacturing exports, they employed various strategies to facilitate and benefit from globalization despite it being a command economy. The government realized that to grow they needed to take advantage of liberalization and they did this in those sectors which were beneficial for higher growth. They decided on an 'open door policy', membership of the world trade organization, the privatization of state-owned enterprises and help welfare and education reforms.

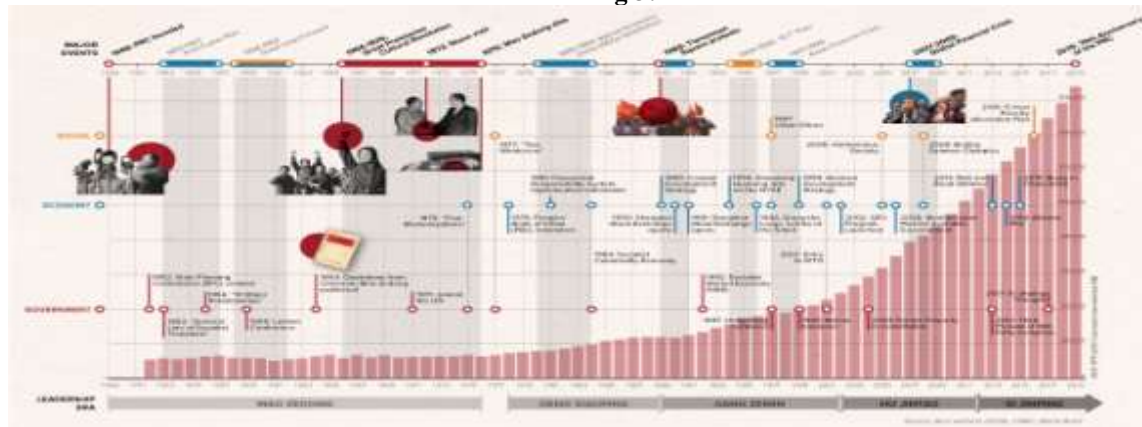
China's economic development was mainly due to an industrial sector which included manufacturing, construction, mining and utilities. In the 'global value chain' concept in 2020, value-added industrial output accounted for 38% of China's GDP. The Chinese economy adopted a dual price system which provided commodities at 'planned prices' to its citizens and it sold the balance at market prices to the world. The growth of a vibrant manufacturing sector in the rural area was the main source of labour surplus employment in the agricultural sector.

The economy focused on four major aspects:

1. Agriculture
2. Industry
3. Science & technology
4. The military

It aimed to generate higher productivity of capital, by focusing on research and development as well as technological investments from abroad. They introduced the market system first in the rural areas and then in the urban areas, which led to gainful employment of its excess labour force without migration. Agriculture was an extremely important sector at all times of growth along with the manufacturing sector. There was never any neglect of the primary sector. It is this basis of providing food for all and simultaneously encouraging the growth of the industrial sector which resulted in higher wages and easy migration of the labour from the agricultural to the industrial sector.

**Fig 3:-**



Source: visualcapitalist.com (google images).

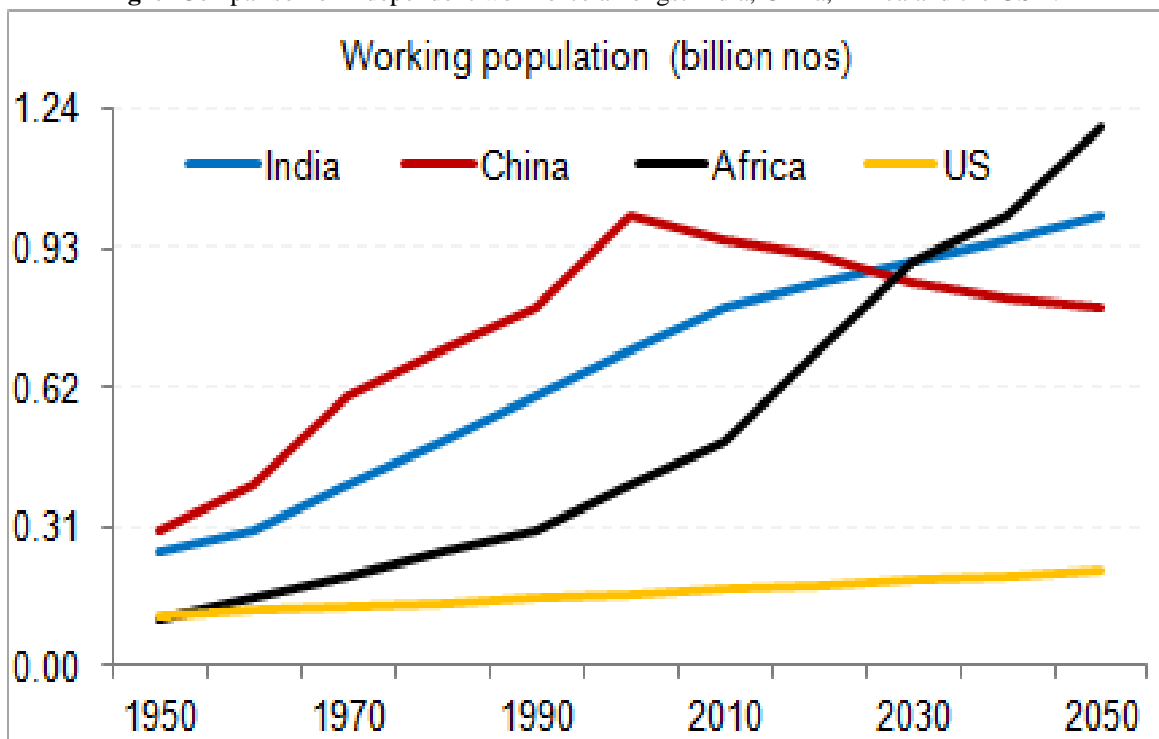
### Efficient Use Of Labour In A Democratic Economy Like India

India is in an enviable position as it has a large percentage of an independent workforce. Efficient use of such a resource will result in India moving towards a US \$10 trillion economy by 2032, and a US \$31 trillion economy by 2047. If this is achieved India's GDP would increase by 8 times. Policies to use this dividend should entail that the population has good health, quality education and jobs or resources for self-employment such that the economy can harness the opportunity which is time limited.

This is an asset that can be utilized only when the independent workforce is gainfully employed. Personal savings increase and once this happens, it leads to increasing investment which is what is required for the economy to achieve high rates of growth. The moment women enter the workforce, it automatically leads to fewer births and parents are then in the position to spend more resources on a child, leading to better educational and medical outcomes. A higher growth rate could lead to a further increase in productivity and living standards. Women entering the workforce would automatically increase by close to 1% point. It has been seen that though the Indian economy achieved high levels of growth, logging 9% GDP per annum during the 2003- 2008 period, the impact on the reduction of unemployment and poverty did not reach the same levels, thus to assume that growth has a 'trickle-down' effect does not seem very encouraging.

The only way that India can utilize the demographic dividend is to give money to the hands of the poor and focus on equitable and inclusive growth. As India aims to use its demography in a manner that would increase GDP it would require policies that would put money in the hands of the poor. Welfare programs by the government would help in achieving some form of equality. The economy rapidly moving towards digitalization has helped in putting money in the hands of the recipient as it is directly transferred to their bank accounts. Most of the welfare policies have been women-centric, this ensures that women have bank accounts and they can independently spend the money they receive. This is one way of empowering the women of India. But without proper policies, the increase in the working-age population could lead to rising unemployment resulting in economic and social risks for society at large.

**Fig4:-** Comparison of independent workforce amongst India, China, Africa and the USA.



Source: google images



**Fig5:-** Growth impact of India's demographic dividend.

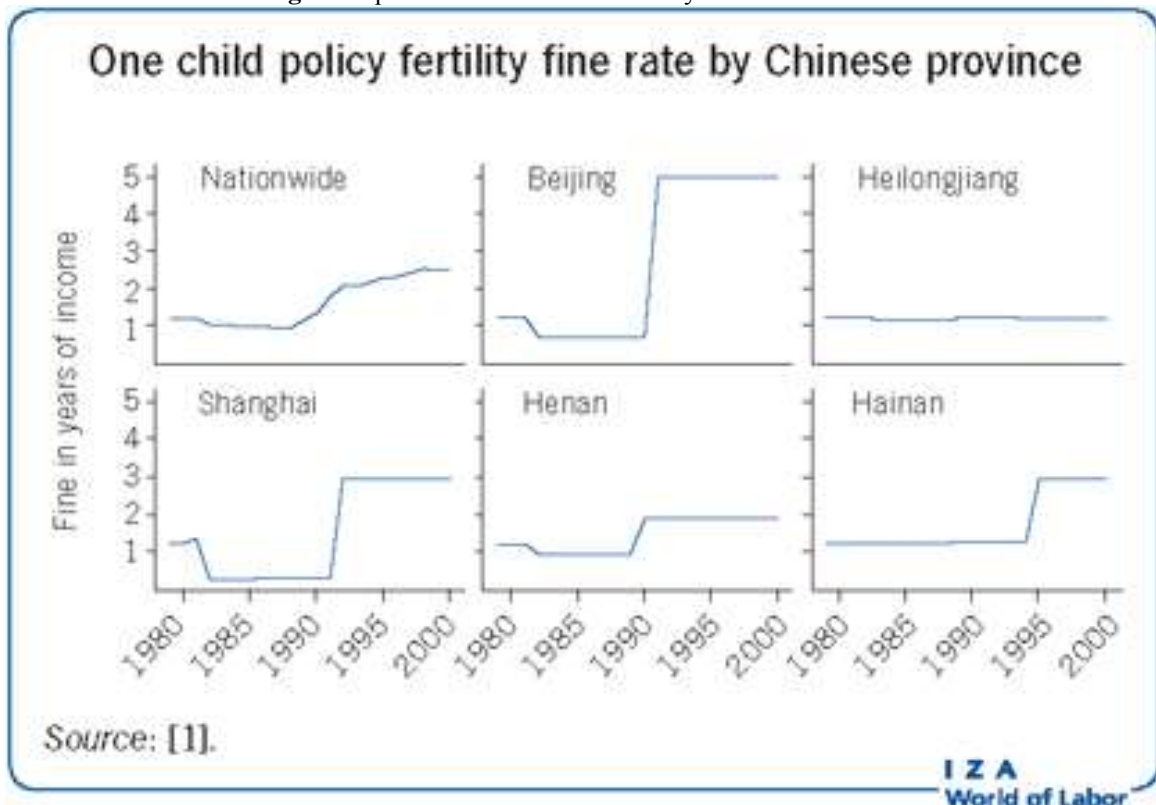
Source: Dun & Bradstreet

#### Policy Measures To Be Adopted By China As The Independent Workforce Is Declining

China has started moving towards more capital-intensive technology and research and development in the technological sector. It has realized the disadvantage of insisting on a "One child norm" and has started encouraging young couples to have more than one child. The challenge that this economy is facing is a shrinking labour force. In the short run, policymakers are contemplating an increase in the retirement age to boost supply and institute reforms that will focus on increasing the labour productivity of the existing labour force and reducing labour market friction. China's growth trajectory was mainly due to efficient utilization of the labour workforce and hence enjoyed demographic gains.

After the pandemic, China has rebounded back with high growth but total employment has remained below the pre-pandemic level of 2020. The main reason being China's working population has been falling for several years and has limited the size of the labour force available for employment. 'One child norm' suited the citizens as living standards had increased and to maintain the same level, they could afford only one child.

A temporary solution is to increase the retirement age but it will not help the economy till the fertility rate increases. The Chinese government has started recommending a two-child policy, as well as allowing internal migration and providing government subsidies to parents having a second and third child, at the same time increasing the productivity of the existing labour force.

**Fig 6:-** Impact of the 'One Child' Policy in China till 2000.

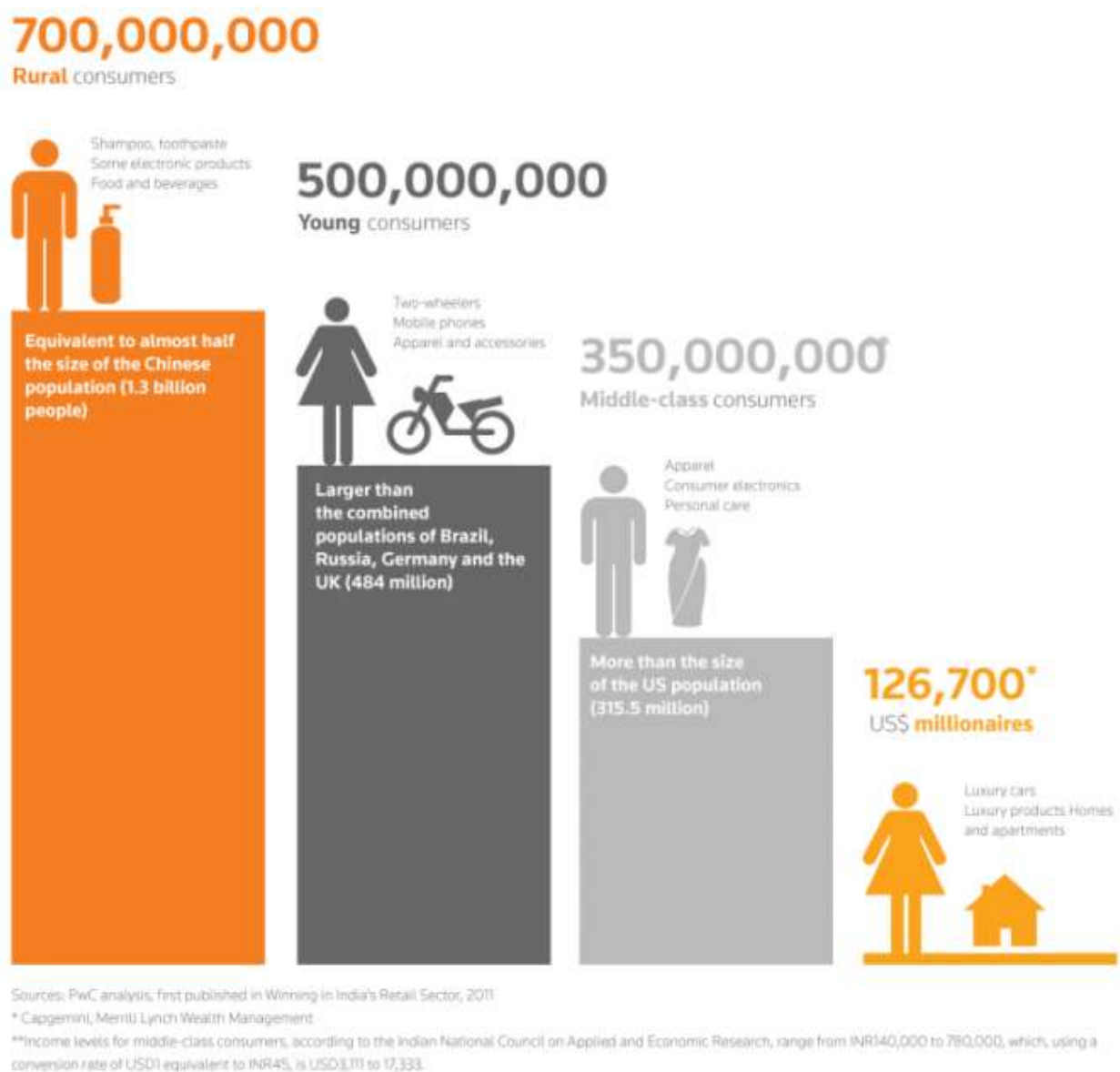
Source: google images

**Lessons To Be Learnt For India**

India is at the same level that China was with respect to the workforce 20-25 years ago. By 2047, India will have 1.1 billion people in the working age group (15-64). It is possible that despite steady growth, India will not be able to provide employment opportunities to all the young people entering its workforce. By 2023, India has become the most populous country. The advantages are that as the population grows, there is an increase in the demand for goods and services, but at the same time, this huge population would lead to enormous pressure on the labour market. India must generate at least 231 million jobs over the next 25 years.

This involves increasing participation by women, increasing non-agricultural jobs, reducing the share of the population that is dependent on agriculture requiring a transition from agriculture to the non-agricultural sector, as well as encouraging non-agricultural activities in the rural sector.

India's GDP would have to continuously grow such that it would result in creating jobs and utilizing its demographic dividend. It is also essential that we increase our Gross Fixed Capital Formation (GFCF). This will in turn further increase the availability of jobs. Domestic savings would also need to increase so that they would be available for investment. Along with all of the above, foreign capital also plays an important role especially if it is in the form of FDI (Foreign Direct Investment).

**Fig 7:-** Depiction of Demographic Dividend in India.

Source: Google Images

**Conclusion:-**

India must use the opportunity that it has presently in the form of a huge pool of independent workforce. The demographic situation in the economy is such that the independent workforce is greater than the dependent workforce. China used this resource to its advantage and developed small industries and manufacturing units which made the optimum and efficient use of it, resulting in great strides in the growth of GDP as well as a huge advancement in the standards of living of the population.

India has this advantage presently but it has to ensure productive opportunities to make use of it effectively. This can be done with higher capital formation and the government's intervention concerning ironing out obstacles that medium, small and micro enterprises face with respect to credit, infrastructure and market. This will encourage their growth and help them in the adoption of superior labour-intensive technology. The government should take it upon



itself to skill a large number of the labour force so that they can be gainfully employed. This has been attempted to do with the adoption of 'Skill India'.

An attempt in this direction will definitely help in using this precious resource as a dividend. If this is not effectively used it could result in a demographic disaster.

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