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Research Article

POPULATION GROWTH IN UNITED INDIA SINCE 1881 TO 1941

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ABSTRACT

The present paper gives a brief overview of various theories of population growth which includes Malthusian theory, optimum theory of population and demographic transition. It discusses about the need to study population growth. The paper primarily focuses on the trends of population growth in united India and the Indian union, the causes of high death rates and its impact on population growth and the influence of migration on population growth from 1881-1941. It provides the substantial understanding of why the mortality was too high during that period and why it started declining after the break even year of 1921. It also suggests that the population growth during 1881-1941 was basically determined by the sharp fluctuation in the death rates. The birth rate was only the static factor in of the history population growth in the British India and it did not affect the population much.

INTRODUCTION

Why do we need to study population growth?

There are two reasons given in the literature for studying population growth:

A larger population can make a positive contribution to economic growth if the other resources like capital and land are initially underutilized due to shortage of labour. In that case population growth means more and more workers get employed who in turn can save and invest a part of their gains. These savings contribute to economic growth directly and if these savings are invested by the households in educating their children to make them better workers, these savings contribute to economic growth indirectly.

On the other hand if the other resources of the economy like capital and land are already scarce then any increase in population will lead to diminishing returns and slow or even negative labour productivity. Thus, instead of becoming a benefit, population growth becomes a burden for the economy as the larger family size eats up the savings that were initially intended for investments. This may give rise to the serious problem of poverty.

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Theories of Population Growth

MALTHUSIAN THEORY

The Malthusian theory of population was first propounded in 1798 by a British economist Robert Malthusian. In his own words the theory can be stated as, "By nature human food increases in a slow arithmetical ratio: man himself increases in a quick ratiounless wants and vice stop him" .Malthus based his theory on the biological fact that every living organism tends to multiply to an unimaginable extant while on the other hand production of food increases with less than proportionate change. It is subject to law of diminishing returns. According to Malthus population tends to outstrip food supply.

Propositions of the Theory:

The theory propounded by Malthus can be reduced to the following four propositions

- Food is necessary for the life of a man and therefore exercises a strong check on population. In other words, the size of population is determined by the availability of food.
- Human population increases faster than food production which tends to out turn the increase in food production.
- Population always increases when the means of subsistence increase unless prevented by some powerful checks.

- There are two types of checks that can keep population on a level with the means of subsistence. They are preventive and positive checks.

The population of a country is limited by means of subsistence i.e. the population is determined by the availability of food. The greater the food production, the greater would be the population and vice versa. Growth of population outruns food production.According to Malthus, there is no limit to the fertility of man. Man multiplies itself at an enormous rate. But the power of land to produce food is limited. It means that the production of land increases at a lesser rate as compared to production of man. Thus, the continued growth of the population would result in a decrease in output per worker and a decline in the amount of food available per person. Population increases when the means increase. As the food supply in a country increases, the member of children per family also increases. It, therefore, would result in an increased demand for food and their food per person will diminish. Thus, according to Malthus, the standard of living of the people cannot rise permanently. According to Malthus, positive and preventive checks can control the population. Preventive checks are those that are applied by man and include measures for bring down the birth rate. The positive checks on the other hand exercise their influence on the growth of population by increasing death rates. They are applied by nature. Epidemics, wars and famines are some examples of positive checks.

OPTIMAL THEORY OF POPULATION

According to the theory, given a certain amount of resources, the state of technical know-how and a certain stock of capital, a country must have a certain size of population at which the real income (goods and services) per capital is the highest. This size of population is called optimum population. In other words, optimum population refers to a size of population at which the real income per capital is the maximum. If population exceeds the optimum size, it is said to be over populated. Such a condition develops in a country, when its available resources are fully exhausted and there exists no chance of their further exploitation.

It is necessary at this stage that the country must practice preventive checks and to escape from the misery of positive checks. According to this theory, there are three phases of population in a country viz. (a) Under Population:- A condition where real per capita income rises with a rise in the size of population. (b) Optimum Population:-A situation where real income per capita is the highest. (c) Over Population. From under and optimum population, a country moves, unless preventive checks are applied, to the level of over population, at which the real income per capital diminishes.

DEMOGRAPHIC TRANSITION THEORY

Demographic Transition (DT) refers to the transition from high birth and death rates to low birth and death rates as the country develops from a pre-industrial to industrialized economic system. This theory is based on the interpretation of demographic history developed in 1929 by the American demographer Warren Thompson (1887–1973).Thompson observed changes, or transitions, in birth and death rates in industrialized societies over the previous 200 years.

The transition involves four stages

- STAGE I :- In stage one, pre-industrial society, death rates tended to be high in all societies because of the risk of diseases and famines. It was economically rational then to sustain high birth rates. The net growth in the population was small. The birth rate was sustained via religious doctrine, moral codes, laws, marriage habits and family structure.
- STAGE II :-In stage two, that of developing countries, death rates first in the Western societies and then in the developing world began to fall. These fell because of changes in health care system and nutritional improvement. But the birth rates did not fall becausethe props(doctrine, customs and so on.) sustaining the high fertility did not decay as quickly as the improvements in health and nutrition took place. So as mortality began to fall, fertility remained stable and the world entered the period of high population growth.
- Stage III :- Eventually the economic costs of having large families began to be seen as excessive. In the west it happened in the course of urbanization, industrialization and increasing women's participation in labour force. Mass education made individuals aware of the costs and benefits of large families and it enabled more women to enter labour force. So the social props began to decay, fertility declined, and societies entered low population-growth regimes.
- STAGE IV :- In this stage both the birth rates and the death rates are very low. Birth rates may drop to well below replacement level as has happened in countries like Germany, Italy, and Japan, leading to a shrinking population, a threat to many industries that rely on population growth. As the large group born during stage two ages, it creates an economic burden on the shrinking working population. Death rates may remain consistently low or increase slightly due to increases in lifestyle diseases due to low exercise levels and high obesity and an aging population in developed countries.
- In many developing countries, including India, the first phase of transition has already occurred. A high population-growth regime began from the inter war period. But the second part, the return to a low population growth regime, has yet not occurred. The high rates of population growth in modern times was due to relatively slow decay of social props, in turn due to, say, an absence of mass education.

DEMOGRAPHIC TRENDS IN INDIA, 1881-1941

Systematic studies of demographic trends are possible only from 1871 when census was taken for the first time in India. All the population studies show that the history of population growth in India can be divided into two sharply contrasted periods:

- Pre-1921, a period of slow and fluctuating growth and
- Post-1921, a period of steady and now accelerating growth.

From the above table it is quite evident that the average annual growth rate of population of colonial India was 0.9% in 1891, 0.1% in 1901, 0.6% in 1911 and the figure dropped to 0.1% in the year 1921.

Table. Population of colonial India and Indian union, 1881-1941

BRITISH INDIA AND THE PRESENT TERRITORY STATES,EXCLUDING BURMA OF INDIA

Total Average Total Average No of persons (million) Annual (million) Annual added every Growth rateGrowth rate 10 years (%) (%) (millions)

1881	257	n.a	n.a	n.a	
1891	282	0.9	n.a	n.a	
1901	285	0.1	239	n.a	
1911	303	0.6	252	0.6	13
1921	306	0.1	251	0.0	-1
1931	338	1.0	279	1.1	28
1941	389	1.4	319	1.4	40

Table. Death and birth rates, 1881-1951

	Death rates(deaths per 1000 persons)	Birth rates(births per 1000 persons)
1881-91	40-42	47-49
1891-1901	38-50	46-51
1901-11	41-44	44-48
1911-21	42-50	45-49
1921-31	33-38	42-48
1931-41	30-32	43-45
1941-51	25	40-42

Source: See Visaria and Visaria, 'population', for these estimates

This large fluctuation in the growth rates was due to wide spread epidemics and famines.In particular, 1876-77 famine and the influenza epidemic of 1918-19 caused unusual mortality just before a census count. In the latter two decades after 1921 the population grew at an average annual rate of 1.0% and 1.4% respectively. Steady growth from 1921 was possible because of the gradual elimination of disturbing causes such as epidemics, famines etc. The year 1921 is considered to be the BREAK-EVEN POINT in the history of population growth in India.

Determinants of population growth

In a statistical sense there are three main factors determining population growth. These are the mortality or death rate, fertility or birth rate, and net migration. In a transition from low to high population growth rates, the birth rate has been the relatively static factor and the death rate the more dynamic factor.

MORTALITY: CAUSES OF HIGH DEATH RATES TILL 1921

The above table shows the general tendencies in birth and death rates. It is clear that why population growth rate was low until 1921 and accelerated thereafter. The birth rates did not change much but the death rates were initially very high by world standard and declined steadily and quickly from 1921. The most striking feature of India's population history is the mortality.

There were two factors which determined mortality, one is short term factors which include diseases such as cholera, plague, small pox, and malaria and the other is long term factors which are environmental in nature. The diseases which are responsible for high mortality are plague and small pox which occur intermittently but in epidemic form, while others are regular and wide spread, but do not show an outburst in an epidemic form. Plague itself caused 5.22 million deaths in the first decade of the twentieth century. Small pox and cholera accounted for 0.93 and 3.74 million deaths in 1901-10. It is thus apparent that these epidemic diseases attract a lot of notice due to the panic they create, but in the context of total mortality they are not so important. Taken together they rarely account for more than 5 to 10 percent of total deaths. Malaria, whose incidence is variously estimated, is the most important single cause of high mortality in India. Gyan Chand suggests that "roughly 20% of all deaths are traceable to malaria alone." Kinsley Davis is of the view that "the annual death rate from this disease is about 5 per 1000 inhabitants, nearly three times the rate of plague, cholera and small pox combined. Coale and Hoover estimate that "there must have been about 2 million deaths caused by malaria per year in India prior to 1951 of an annual total of some 10 to 11 million deaths."Other diseases which account for high mortality in India are tuberculosis, dysentery and diarrhea, respiratory and pulmonary infection and deficiency diseases of all kinds. The heavy incidence of these diseases is partly due to dietary deficiency and low resistance of people, but partly due to exposure to infection which is severe under unhygienic and insanitary conditions of living. Tirthankar Roy suggests that "the famines were due to environmental factors and inherent in India's ecology. India's location in the tropics makes this region very much vulnerable to famines.

Much of the regions escaped actually from being a desert thanks to monsoons. But the summer heat is so great that even a small delay in monsoon could badly affect the agriculture. Thus the possibility of the crop failure, water scarcity, and famines are inbuilt in the geography of the region, and famine did strike with almost predictable regularities until 1900".To start with the great famine of 1867-68 was perhaps the most grievous calamity experienced since the beginning of the 19th century. The famine affected Chennai, Mumbai, Uttar Pradesh and Punjab. Due to this famine extensive areas were depopulated and large tracts went out of cultivation. Again the decade 1891-1901 saw the recurrence of severe famines in greater part of the country.

Amartya sen suggests that "the famines in the British era were due to a lack of a serious effort on the part of the British government to prevent famines. He links the lack of this serious effort to the absence of democracy in British India." Thus the two factors i.e. epidemic diseases and famines both are equally responsible for high mortality rate until 1921. Famines and epidemics usually occurred together which in turn worsen the situation and led to millions of deaths in the British India.

INFANT MORTALITY

An important aspect of Indian mortality is the heavy incidence of death in the early years of life, especially during infancy. Infant mortality per 1000 live births was above 200 in 1901. Though this figure was somewhat better than some of the South American countries and even Europe, it was still among the world's highest. The causes of infant mortality were not necessarily the same as the causes behind high mortality in general. It did not occur due to epidemics or famines. The high infant mortality was the result of poor health of mothers. This in turn was the result of child marriage, frequency of motherhood, primitive obstetrics, and unsanitary conditions.

CAUSES OF MORTALITY DECLINE AFTER 1921

As far as literature is concerned relating to the developing world as a whole, there are two positions on the origin of mortality decline. The first emphasizes public health measures that led to better treatment of communicable diseases. The four pillars of successful medical intervention in the early 20th century were malaria eradication, immunization programmes, improved sanitation and use of antibiotics. However the critics argue that none of these measures was universally applied before mortality began to decline. An alternate position is that a worldwide improvement in nutrition led to improved resistance to diseases. This change owed less to the quantity of food consumed and more to better distribution of food intake.

In India, the specific variables that are believed to have played the most important role in the mortality decline illustrate the second position, though the role of first position can't be ignored after 1920. In India's perspective three specific factors need to be considered which caused declining mortality. First, a well-developed government machinery for famine relief came into place. Secondly, long distance private trade in grain expanded because railways grew in density and reach, and now grain could move into areas of scarcities much faster than before in response to higher prices of grain. Thirdly in some regions, a network of irrigation canals contributed to increased stability in food supplies. Along with these, major achievements had been made in disease prevention and control about the turn of the century.

BIRTH RATE

In the Indian population growth history birth rate is relatively a static factor in transition from low to high population. Why the birth rate is high is a less debated question. But why it remained high even as mortality declined is not easily answerable. A high death rate itself induces a high birth rate. If there is less chance of survival of the child the parents are induced to produce more children. Fertility rates in India did not reach the biological maximum. But they were high enough to maintain the population stability in the face of high death rates and were also high by world standards.

Several other factors also contributed to the high birth rate such as early marriage etc. On the other hand there were several social practices that had a depressing effect on the birth rate. The most important were the female infanticide in north India and prohibition of widow re-marriage among the Hindus especially.

Even though the mortality decline after 1921, fertility did not show any dip in its figure. The long term stability of the social props is the most reasonable hypothesis for high fertility rate in India. The social status of the women had been influenced by the biological needs to adapt fertility to the great risk of early death. Early marriage also led to less participation of women in the commercial work, low levels of female literacy, and a social attitude that did not see women as directly productive worker. Thus social props were basically responsible for high birth rate even though the mortality started declining.

IMPACT OF MIGRATION ON POPULATION GROWTH

INTERNATIONAL MIGRATION: International migration was never a significant influence on population growth rates. In 1881-1891, emigration from India was about 0.3% of the 1981 population. In the next decade the percentage was little higher, but it declined thereafter. Organized emigration began in the 1830s when recruiting agents contracted with large parties of potential workers and arranged to send them abroad. During 1830-1930, about one and a half million people left India to work abroad. But majority returned back to India so the net migration was very small. From the early 1920, net migration began to fall quite sharply even as the number of migrants increased. For after 1920 return migration speeded up.

INTERNAL MIGRATION: Internal migration had no impact on the population growth of India as a whole but it did have a significant impact on the population growth of certain regions within India. The data related to internal migration is available only after 1901.Persons who declared themselves as immigrants formed about 1.8% of the total population of India in 1901 and 3% in 1931. In absolute terms there had been an increase of about 5 million persons. The common factors behind the internal migration seem to be (1) socially and economically depressed condition in the source areas,(2) new economic opportunities that arose during the colonial period, and (3) easier transportations. Migration of any kind did not affect the population growth rate of India very significantly. It may have led to an increase in absolute terms but in relative terms the effect is negligible. The difficulties of the sea voyage and very different kinds of life at the destination greatly discouraged the international migration. Also internal migration perhaps became a major substitute for international migration for persons who wanted to move. Thus net migration did not affect the population of India as a whole but it did affect the population within India across regions.

Conclusion

The population growth in the British India was highly fluctuating till 1921 but after that the population grew at a steady and now accelerating rate. Before 1921 both the death rates and the birth rates were very high leading to negligible increase in population. The birth rates were high because of the socials factors such as preference for a male child, early marriage etc.

The death rates were high because of two reasons: (1) widespread epidemics and diseases, nutrition, sanitation, and social institutions, and (2) the re-occurrence of episodes of famines before 1921. A section of the colonial bureaucracy believed that famines were the expressions of a Malthusian imbalance between resources and population in the region while Tirthankar Roy suggests that the regular episodes of famine in the British India were inbuilt because of its geographical location. The dependence of agriculture on a natural supply of water increased the risk of crop failure and that single cropping reduced the security against the failure of monsoon crop. The argument given by Roy sounds more profound in a sense that Malthusian imbalance between resource and population was possible only if population growth rate exceeds the rate of growth of food supply but during the period 1881-1921 the population growth was almost negligible.

After 1921 the death rate declined and the argument given in this respect was better public health measures leading to better treatment of communicable diseases. But there is no clear cut evidence that actually the public health services improved after 1921. Another argument given for the same was increase in the immunity of the people because of worldwide improvement in nutrition.

This reason sounds reasonable because railways grew in density and reach leading to better transportation facilities across the country. Moreover, migration also did not affect the population much in relative terms.

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