

Economic development

Chapter 9

Population

Definition

Population refers to the total number of individuals, whether humans, animals, or any other living organisms, residing in a specific geographic area or within a defined group. It is a fundamental demographic concept that provides information about the size and composition of a group of individuals within a given region or context.

Theories of population

Demographic Transition Definition

Demographic transition is defined as the change in patterns of birth rates and death rates as a city, a country, or a continent transitions through increased industrialization or the industrial revolution. The theory emphasizes the point that the boost in economy and industrial growth directly affect the population structure of human beings.

As the graphic below shows, the demographic transition is a sequence of five stages:

- **Stage 1 – high mortality and high birth rates:**

In the past birth rates were high, but since the mortality rates were also high we observe no or only very small population growth. This describes the reality through most of our history. Societies around the world remained in stage 1 for many millennia as the long-run data on extremely slow population growth makes clear. At this stage the population pyramid is broad at the base as many children are born. But since the mortality rate is high across all ages – and in particular for children – the pyramid gets much narrower towards the top.

- **Stage 2 – mortality falls, but birth rates are still high:**

In the second phase the health of the population slowly starts to improve and the mortality rate starts to fall. Since the health of the population has already improved, but fertility still remains as high as before, this is the stage of the transition at which the size of the population starts to grow rapidly. Historically it is the exceptional time at which the extended family with many (surviving) children is common.

- **Stage 3 – mortality is low and birth rates begin to fall:**

At this stage the birth rate starts to fall and as a consequence the rate at which the population grows begins to decline as well. In our topic page on fertility rates we discuss in detail why fertility rates declined. But to summarize the main points: When the mortality of children is not as high as it once was, parents adapt to the healthier environment and choose to have fewer children; the economy is undergoing structural changes that makes children less

economically valuable; and as women gain more power within society and within partnerships they tend on average to have fewer children than before.

- **Stage 4 – mortality and birth rates are low:**

Rapid population growth comes to an end in stage 4. At this stage the birth rate falls to a similar level as the already low mortality rate. The population pyramid is now box shaped; as the mortality rate at young ages is now very low the younger cohorts are now very similar in size and only at an old age the size of cohorts get smaller rapidly.

- **Stage 5 – the future of population growth will be determined by what is happening to fertility rates:**

The demographic transition describes changes over the course of socio-economic modernization. What happens at a very high level of development is not a question we can answer with certainty since only few societies have reached this stage. If fertility rates are rising again at very high levels of development — as the research by demographers Mikko Myrskylä, Hans-Peter Kohler, and Francesco Billari suggests — then population sizes might stabilize or even increase. However if the fertility rate stays below 2 children per woman then we will see a decline of the population size in the long run.

Malthusian Theory of Population

The Malthusian Theory of Population is the theory of exponential population and arithmetic food supply growth. The theory was proposed by Thomas Robert Malthus. He believed that a balance between population growth and food supply can be established through preventive and positive checks.

Done graph from book

Major Elements of the Malthusian Theory

Population and Food Supply

The Malthusian theory explained that the population grows in a geometrical fashion.

The population would double in 25 years at this rate. However, the food supply grows in an arithmetic progression. Food supply increases at a slower rate than the population. That is, the food supply will be limited in a few years. The shortage of food supply indicates an increasing population.

Checks on Population

When the increasing population rate is greater than the food supply, disequilibrium exists. As a result, people will not get enough food even for survival. People will die due to a lack of food supply. Adversities such as epidemics, wars, starvation, famines and other natural calamities will crop up which are named as positive checks by Malthus. On the contrary, there are man-made checks known as preventive checks.

Positive Checks

Nature has its own ways of keeping a check on the increasing population. It brings the population level to the level of the available food supply. The positive checks include famines, earthquakes, floods, epidemics, wars, etc. Nature plays up when the population growth goes out of hand.

Preventive Checks

Preventive measures such as late marriage, self-control, and simple living, help to balance the population growth and food supply. These measures not only check the population growth, but can also prevent the catastrophic effects of the positive checks.

Criticism of Malthusian Theory of Population

The Malthusian theory was criticised based on the following observations:

1. In Western Europe, the population was rising at a rapid rate. At the same time, the food supply had also increased due to technological developments.
2. Many times, food production had increased more than the population. For eg., 2% of the total population is working in the agricultural sector in the US. Still, the total GDP is more than 14 trillion dollars.
3. Malthus's theory stated that one of the reasons for limited food supply is the non-availability of land. However, the amount of food supply in various countries has increased due to increased globalization.
4. The estimations for the geometric growth of population and arithmetic growth of population were not provided by Malthus. It was stated that the rate of growth is not consistent with Malthus' theory.

Advantages of Population

o Greater economic growth

Population growth will lead to economic expansion since more people can produce more goods. More money will be available in tax revenue to fund public services like environmental and health care programs. The obvious conclusion is that GDP per capita is the essential element rather than GDP as a whole.

o Human Resources will Increase.

One obvious advantage that a large population might offer is a larger supply of human resources. In locations where unemployment is a serious problem, this will likely not lead to more jobs, but it will boost the number of individuals willing to work for less pay.

3. Increased productivity through specialization

The demand for products and services will rise as the population grows, encouraging specialization. This indicates that some people concentrate on creating a single product or service. However, each person's efforts may merge into something amazing depending on their distinct abilities and talents.

Additionally, specialization enables countries to export and participate in globalization. Producers can export commodities to areas afflicted by natural catastrophes or artificial risks instead of only producing locally.

increase in the demand for jobs.

4. Demand has led to more jobs.

More people means a greater demand for products and services, so more jobs are needed for production. Workers are needed at every level, from the production of basic materials through multiple stages to final distribution during consumption.

More employees are necessary throughout this procedure; thus, they can be needed today even if they weren't previously required for certain talents. Several countries are investing in regulating declining birth rates to address the impending labor deficit.

5. Rapid population decreases Social Infrastructure

The government must spend a lot of money on necessities like housing, healthcare, and education. However, a rapidly growing population makes the load heavier.

5. Higher population density efficiency

High population density locations are much more efficient than rural areas and regions with low populations in terms of the per capita carbon footprint. People are more likely to use public transportation and live in easier-to-heat apartment complexes when they reside in densely populated locations.

6. Diversity fosters creativity

Studies that examined the benefits of immigration as a crucial source of innovation have demonstrated increased diversity. Adding new cultures to the mix enables people from all backgrounds to approach problems creatively.

7. Improved societal demographic structure

The population is declining in many western economies, which has led to a skewing of the population toward the elderly and retired. We are struggling to pay for health care & pensions, which is placing costs on society. Moderate population increase contributes to rebalancing the population by increasing the proportion of young, working adults.

◦ Higher Industry Demand

There will be greater demand for some industries in a nation with a higher population. As long as it can produce enough of an item or service to satisfy demand, a company that sells it will experience great success.

◦ Increasing military power

If a country can administer its huge population, it can have a significant military advantage compared to smaller ones. The size of the military will increase, as will the number of military supplies if the economy remains stable and the government can successfully handle the nation's expanding population.

Additionally, a population increase may stimulate technological advancement that would enable the production of more sophisticated military products.

Disadvantages of Population

1 ◦ Increasing Resources Demand

deplete resources

Demand for resources rises as the population grows. Resources, however, are in infinite quantity; thus, this is an issue because if a large number of people utilize them, they'll run out and become scarce, resulting in poverty.

Natural resources will be depleted more quickly due to increased non-renewable resource usage brought on by an increase in population.

Dis Advantage

◦ Shortage of food due to population expansion

More people means more people to feed, which strains food availability. As a result, food shortages are common in developing countries with quickly growing populations. They cannot feed their expanding population despite their efforts to raise agricultural output.

There are two effects on the growth of the economy from food scarcity. First, a lack of food results in undernutrition, which lowers productivity. It further reduces the workers' capacity to produce. Second, food scarcity requires countries to buy grains, which unnecessarily depletes their foreign exchange reserves.

◦ Generating Non-biodegradable waste.

We are now battling to process the non-biodegradable waste that we are producing. It usually ends up in a landfill, contributing to harmful issues like methane emissions.

◦ Increase Pollution

More people will produce more air, water, and land pollution. Numerous health problems, including asthma and cancer, are linked to higher pollution levels. The pollutants also harm animals and vegetation.

5 o Threat to Natural Habitat

As there is a growing need for houses and farming due to an increasing population, there will be a greater threat to natural ecosystems. As a result, there will be more pressure to clear forests to make room for agriculture and habitation.

6 o Disturbance in Emergency Situation

Cities with a high population density frequently have traffic problems. One of the drawbacks of the population is that locations with heavy traffic might be hard to access for emergency vehicles like fire engines and ambulances.

Emergency services are required when there is an accident or another natural disaster.

6 o Infections Outbreaks

The World Health Organization (WHO) asserts that areas with high population densities may see fewer disease outbreaks and lower infection rates. It is much simpler for germs and viruses to move from person to person when so many people live close to one another.

The Covid-19 pandemic provides a clearer explanation for why cities with large densities of people saw greater incidences of viral infection-related fatalities.

7 o Effect on climate

The consequences of climate change will also be seen because of rising greenhouse gas emissions, a major cause of global warming. As the population continues to increase, more damage is being done to our ecosystem.

The ecosystem is under stress due to human consumption and population density, which has reduced biodiversity and increased greenhouse gas emissions from processes like dairy production.

8 o Water Shortage

The pressure that a growing population will place on limited water resources contributes to many small and large wars as nations struggle to solve the water crisis.

9 o Capital production declines as the population grow

To boost capital production, developing countries manage the population composition. Due to the high birth rate & short life expectancy, these countries have comparatively high dependency rates. Rapid population growth in emerging countries reduces the quantity of capital accessible per person, which lowers the workforce's productivity. As a result, their income decreases, and they are less able to save money, negatively affecting capital formation.

10 o A large population exacerbates unemployment.

A fast-expanding population means that a sizable number of individuals will join the labor force, many of whom may be unable to find employment. The number of job seekers is increasing so

quickly in developing countries that it will be difficult to employ everyone despite all attempts to promote planned growth. These countries frequently experience underemployment, unemployment, and covert employment. The rapid increase in the global population makes it practically impossible for economically developing nations to address their unemployment issues.

o Low Quality of Life

Most Indians have a poor quality of life due to the country's rapidly expanding population. According to Human Development Report, low quality of life is demonstrated by a lack of knowledge due to illiteracy, a lack of economic security due to the number of people without access to health care and clean water, and a high proportion of children under the age of five who are severely underweight.