

# Causes of Population Growth: Examining Factors and Trends

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## **ABSTRACT:**

Population increase is a complicated phenomenon that is impacted by many variables. The reasons of population expansion are examined in this chapter, taking into account social, economic, and environmental aspects. It addresses how advancing medical technology, dropping death rates, rising life expectancy, and cultural aspects are contributing to population expansion. The chapter also looks at how social norms, urbanization, and economic growth affect fertility rates. It emphasises the need for comprehensive approaches that deal with the root causes of population increase, advance access to reproductive healthcare, and enable people and communities to make wise decisions for long-term population control.

## **KEYWORDS:**

Food, Growth, Mortality, Nation, Population, Resources.

## **I. INTRODUCTION**

The human population has a maximum carrying capacity, and limiting mechanisms will start to work in order to induce populations to stabilise. Human populations are affected by a wide range of social, political, economic, and ethical issues, unlike those of other types of animals. The information that humans have amassed enables them to foresee the future, make deliberate choices based on the most probable scenario, and modify their lives appropriately. That knowledge includes the assurance that birth and death rates will eventually be equal as populations grow [1]–[3]. This may be achieved by either opting to restrict birth rates or by allowing the mortality rate to increase. It would appear that managing the human population would be easy. Most individuals should choose the correct choice once they see that decreasing the birth rate is more human than allowing the mortality rate to increase, but it is not quite that easy.

### **Biological Reasons for Population Growth**

Demography is the study of human populations, including their traits and how they evolve. By examining a variety of biological factors, demographers may forecast the future growth of a population. When we compare the birth rate to the mortality rate in different nations throughout the globe, the birth rate is nearly always higher. As a result, population growth is necessary. Some nations (such as Afghanistan and Ethiopia) will see fast population growth due to their high birth and mortality rates, which are significantly outpacing each other [4]–[6]. These nations often have a very high percentage of child mortality due to illness and hunger. Guatemala and Syria are two examples of nations with high birth rates and low mortality rates that will see significant growth. In these nations, infant mortality rates are a little on the high side. Other nations, like Sweden and the United Kingdom, will expand slowly because of their low birth rates and closely matched mortality rates to birth rates. The infant mortality rates in these and other more industrialized nations are often relatively low.

The number of women in the population who are having children and how many each will have been perhaps the most significant factor in determining the pace at which human populations are expanding. The average number of children born to a woman during her lifetime is considered a population's total fertility rate. Since population growth will stabilise if the total fertility rate is 2.1 over the long term, a total fertility rate of 2.1 is referred to as replacement fertility. Zero population growth is the condition when there is no increase in the population and where both births and deaths are equal. The age distribution of a population greatly influences the pace of population increase. If there are many young individuals in a population who are raising families now or who will be raising families soon, the population will grow even if the families only have two children [7]–[9].

## Factors Controlling Population Growth

Only man has been able to control his population growth by creating astounding new technology for a better and more secure future. Additionally, it brought to the issue of population increase. Among them are:

- i. Famines cause devastation in a nation or state.
- ii. Natural disasters including hurricanes, earthquakes, floods, droughts, and volcanic eruptions cause thousands of fatalities.
- iii. Endemic and epidemic illnesses decimate large populations.
- iv. Wars result in many casualties.
- v. Unnatural mishaps brought on by travel, such as fires, etc. High food production and improved technology for delivery, processing, and storage are some elements that have aided in population expansion.
- vi. Better medical care is given during delivery and to children under the age of five through immunization.

The various factors may be divided into three categories as follows:

- i. Geographical factors, such as terrain, water resources, mineral resources, and transportation.
- ii. Demographic factors, such as sex ratios, mortality rates, and birth rates (natality).
- iii. Socio-economic issues, such as marriages, employment opportunities, and resources, etc.
- iv. The population has begun to decline in affluent nations.
- v. Better family planning and medical services.
- vi. The high birth rate and low mortality rate.
- vii. The educated individuals who are aware of the abuses of overpopulation have modest families.

## II. DISCUSSION

### Population and Standard of Living

Since various cultures have varied views and sentiments about what is good and desirable, the standard of living is a challenging subject to define. Here, we examine the averages of many cultural traits across three nations:

- i. Zimbabwe, which is less developed.
- ii. Argentina, which is moderately developed.
- iii. The United States, which is an example of a highly developed yet industrialized country.
- iv. Of course, there are huge disparities in the living standards of these three nations. For the ordinary inhabitant in a developing nation, living at what the average American would consider a poverty level would be considered opulent. Living standards and energy use seem to be strongly related.

### Population Explosion-Family Welfare Programme

**Emigration:** The amount of people leaving one population to join another in a different location, which causes the original population to decline.

**Immigration:** Immigration is the influx of new residents from other regions.

**Density Dependent Factors:** As population grows, competition increases since everyone needs the same amount of food and space.

### Population Increases

As a result of food shortages brought on by population growth, people die from famine. Factors unrelated to population density include interactions between communities in a specific region, which may result in advantages for both parties, rivalry for resources, or dependency on one another.

### Population Explosion

The extremely significant and ongoing rise in the number of people in contemporary times. This poses a serious threat to a country's ability to flourish and prosper.

### Consequences of Population Explosion

- i. It could result in resource depletion.
- ii. Strong rivalry for food and available space

- iii. An increase in mental strain and tension.
- iv. Rapid environmental contamination.
- v. Large-scale unemployment

In order to fulfil the needs of an expanding population, forests are chopped down, seas are plundered, and the balance of nature as a whole is upset. A growing human population first confronts the issue of food, then the issue of housing, and finally the issue of other socioeconomic issues. Even if there is adequate food produced and the population expansion is explosive rather than gradual, several secondary issues will undoubtedly develop that are more enduring and severe. Increasing competition for housing, healthcare, education, and other services; a rise in the price index; an ecological problem, etc.

### **Human Population: Malthus's Human Population Theory**

The eminent economist T.R. Malthus released an article on population in 1798 in which he graphically illustrated the issue and claimed that although food supply rises by an arithmetic progression (1-2-3-4), human population tends to expand in a geometric pattern (1-2-4-8). This is referred to as the Malthus population increase hypothesis. Malthus's theory was all but forgotten for over 150 years due to the growth of technology. Records show that there were only 10 million people on the planet during the Stone Age. In the previous three centuries, the yearly growth rate was around  $0.4 = 0.5\%$ , but in the recent two decades, it has increased to 2%. From 200 years in 1650 A.D. to only 35 years in 1980, the doubling time the period of time it takes for a population to double has decreased significantly. The birth and mortality rates were roughly equal in 1800 AD.

### **Current Population Trends**

More than 5.5 billion people live on Earth at the moment. This is anticipated to rise to slightly over 7 billion people by the year 2010. African, Asian, and Latin American countries, which currently account for around 80% of the global population. By the year 2010, the combined populations of Africa, Asia, and Latin America will rise from the present 4.4 billion to almost 7 billion, making up 83 percent of the world's population. These areas also have the lowest per capita gross national product (GNP), while having the greatest rates of population increase. The GNP is a metric that counts all the products and services produced in a nation. This significant disparity in economic well-being is mirrored in a difference in the quality of living, an arbitrary indicator of how effectively everyday needs and comforts are provided.

### **Consequences of Continued Population Growth**

The need for basic essentials will rise as long as people continue to populate the earth. As a result of the majority of population growth taking place in less developed nations, the gap in living standards between developed and developing nations will continue to be wide. Fuel and other resources are becoming scarcer. As the industrialized nations try to retain their existing quality of life, the strain on these resources will increase. In less developed nations, people will keep looking for additional space to cultivate the crops they need to support themselves until there are significant advances in food output per hectare [10]. Developed nations may have to decide between assisting the less developed nations while retaining their relationship and excluding themselves from their troubles. The quantity of resources available per person will decrease as the world's population grows, even if industrialized nations continue to get a disproportionate percentage of the planet's resources. It seems that the less developed regions will continue to have a poor level of living as the global population grows.

### **Environmental Implications of Food Production**

Only at the cost of other animal and plant species can the human population rise. Each ecosystem has a maximum biomass that can exist since each ecosystem has a limited carrying capacity. Changes in ecosystems may permit a rise in the population of one species, but this will always have a negative impact on some other populations since they will be vying with it for the same essential resources. The number of buffalo decreased as farming became more prevalent in North America's grassland areas. Humans use agricultural practises to produce food, transforming natural ecosystems into agricultural ecosystems that are artificially managed. Agricultural resources that are mismanaged often end up ruined forever. In most situations, many humans would starve to death if the vegetables were given to animals. In contrast, meat and other animal protein sources play a significant role in the diets of most wealthy nations.

Many people are malnourished in a different sense because they eat excessively. One person eating at the carnivore level has an ecological effect that is around 10 times greater than one person eating at the herbivore level. The industrialized world's population would greatly lessen its demands on global resources if it reduced its consumption of animal protein. The present state of global food production and hunger is quite complex. Food

production requires a variety of resources, including arable land, manpower, machinery, the right crops, and financial incentives. Additionally, there is an improper allocation of food across nations. Since the poorest people in the majority of nations sometimes struggle to obtain the requirements of life while the wealthier people have an abundance of food and other resources, this is frequently an economic issue. In certain regions of the globe, the production of food has been greatly enhanced through better plant types, irrigation, and agricultural techniques. India, China, and a large portion of southern Asia have recently transitioned from being food importers to self-sufficient, and in some instances, food exporters.

### Population Trends in India

India is home to around 1.5% of the world's population. Over the last 80 years, the population has increased by around three times. In this nation, there were 235,396,327 inhabitants in 1901, according to the census. Due to a few epidemics, the population marginally decreased in 1921. The population increased from 361,008,090 in 1951 to 439,234,771 in 1961 and 548,159,652 in 1971. The decline in mortality rate brought on by improved medical treatment is the primary cause of the fast development. In India in 1981, there were 1071 men for every 1000 females. In Punjab, there were 1138 men for every 1000 women in 1981, but in Kerala, there was 969 men for every 1000 women. The age distribution of the Indian population reveals that a large percentage of children, or 42.2% of those between the ages of 0 and 14, are in the pre-reproductive age group.

### Measures to Control Over Population

There are several ways to stop population increase in the shortest amount of time, including

- i. Educating people about the negative effects of overpopulation, food production, and self-employment.
- ii. To provide free family planning tools and techniques.
- iii. Encouraging individuals to undertake sterilization.
- iv. Increased rewards for households adhering to family planning standards Limited family.
- v. By establishing regulations via legislation.
- vi. One of India's many issues is its excessive population. The population issue has to be solved immediately. Major initiatives that may be taken to tackle the population issue are listed below:

**Instruction:** Because of their lack of education and ignorance, Indian parents have been having children at an astronomical pace. People need to be made aware of the effects of population growth and the benefits of planned and small families.

**Family Planning:** The term family planning refers to a conscious effort and the use of proper procedures to limit the size of the family. In other words, family planning is consciously limiting the number of children. Here are a few crucial family planning strategies. Utilization of contraceptives mechanical, chemical, and natural methods. Contraception refers to the act of preventing pregnancy. There are several methods of contraception that may be used, including today's methods. Sterilization abortion; and the use of alternative natural remedies.

### Mechanical Method

1. The diaphragm is a rubber cup stretched over a foldable metal spring coil for feminine usage. It is made to fit over the cervix, which is the mouth of the uterus.
2. Intrauterine Contraceptive Device (IUD) tiny metal or plastic contraption is designed to fit within the mouth of the uterus. IUDs must be placed and removed by a doctor.
3. The Indian Health Ministry has approved a novel implant. The implant, which is inserted under the skin, guarantees 5-year contraceptive effectiveness. There is some opposition to the woman's body since it is a novel kind of contraception in India. It will be deployed first in cities.

### Chemical Method

#### a) Jellies, Creams, and Foams

There are several spermicidal jellies, creams, and foams that may be used as contraceptives. Five to fifteen minutes before to the intended time of copulation, these jellies, creams, or foams are injected into the vagina. Oral contraceptives: Also referred to as pills, they are concoctions of synthetic sex hormones, such as progesterone and oestrogens (e.g., mala). They change the adulatory cycle and hormone-mediated ovum generation is suppressed.

### **b) Sterilisation**

This surgical procedure prevents the sperm or ovum from passing through. Sterilisation is possible on both sexes without affecting their sexual prowess.

### **c) Vasectomy**

In men, the method of sterilization is known as a vasectomy. The vasa deferentia, the tubes connecting the testes to the ejaculatory ducts, are severed during this treatment to prevent the sperm generated in the testis from reaching the ejaculatory ducts and entering the ejaculate.

### **d) Tubectomy**

This procedure is performed on females. The fallopian tubes that carry the egg from the ovaries to the uterus are cut and shut off during this treatment.

## **Climate Change and Human Health**

The definition of health according to the Webster Collegiate Dictionary is the state of being hale and sound in body, mind, or soul, especially from physical disease or pain. The idea of health encompasses a person's physical state—one that is free from illness—as well as their social and mental capabilities. A community is a collection of people who live together and interact socially. A healthy man benefits the nation, but a sick one is a burden. Community health services provide medical care for a variety of illnesses, prevent the spread of infectious diseases, manage pests and insects, provide social welfare health services, child welfare and maternity care, offer medical care in schools, operate hospitals and research facilities, among other things. Numerous communicable illnesses are transmitted by inadequate shelter, clothes, and nutrition. Poverty increases the prevalence of maternal and newborn mortality, which also causes child abuse, alcohol and drug addiction, exploitation of women, and other crimes against them.

Health and the environment are interdependent. Climate, noise, and radioactive contamination are examples of the physical environment. Our health is influenced directly or indirectly by factors such as heat, air pressure, water, and air. A human life in a biological environment that is home to many biological microorganisms, including insects, which can transmit illness. The social and economic environment affects health standards as well. The family is the fundamental building block of society, and it is where man develops his social surroundings. Smaller families will have healthier people who are content and successful in their lives. The work of raising children becomes challenging in big households. When the needs of healthy eating and health are not prioritised, children's personalities and general development suffer.

### **(i) Socio-economic factor**

leads to insufficient family resources, which makes it difficult to satisfy demands, lowers health standards, and makes food problems more common in impoverished households. Inappropriate diet and poor hygienic practises lead to the development of contagious and dangerous illnesses. One of the main issues to address in order to improve living conditions, sanitation, and health is illiteracy.

### **(ii) Communicable Disease Problem**

In India, contagious illnesses can spread widely. Some of the factors that contribute to the development of illnesses include contaminated food and water intake, filth, sewage waste, inappropriate lighting and clean air, improper ventilation in the home, stagnant water and dirt, overcrowding, lavatory, and hygiene. Communicable illnesses may be transferred directly via contaminated food, water, or air as well as through contact. Typhoid, cholera diarrhea, and other illnesses are among them. Malaria and other illnesses similar to the plague are transmitted by insects and microorganisms.

## **CONCLUSION**

A number of variables that differ across nations and areas affect population growth. This essay has illuminated some of the main social and economic elements that contribute to population expansion. The improvement in healthcare and the drop-in death rates have been major contributors to population growth. Lower infant mortality rates and longer life expectancies have been achieved as a result of improvements in medical technology, immunization availability, and healthcare infrastructure. More people grow up and contribute to population expansion as a consequence of more people living to maturity. Population increase is influenced by social and cultural aspects as well. The desire for higher family numbers may be influenced by cultural standards, religious

convictions, and traditional practises. Having more children may be seen as a sign of success in certain countries, while it may be a sign of poverty in others due to lack of access to contraceptives or a lack of knowledge about family planning.

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