

Demographic Transition Theory

Theory of Demographic Transition is a theory that throws light on changes in birth rate and death rate and consequently on the growth-rate of population.

Along with the economic development, tendencies of birth-rate and death rate are different.

Because of it, growth rate of population is also different.

“Demographic transition refers to a population cycle that begins with a fall in the death rate, continues with a phase of rapid population growth and concludes with a decline in the birth rate”-E.G. Dolan.

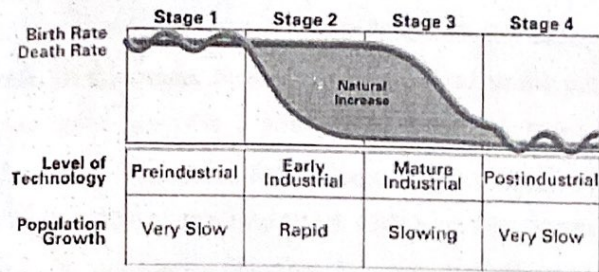
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According to this theory, economic development has the effect of bringing about a reduction in the death rate. The relationship between birth and death rates changes with economic development and a country has to pass through different stages of population growth. C.P. Blacker divided population into five types as high, stationary, early expanding, low stationary and diminishing. According to the theory of demographic transition, population growth will have to pass through these different stages during the course of economic development

History of the theory

The theory is based on an interpretation of demographic history developed in 1929 by the American demographer Warren Thompson (1887–1973).^[1] Adolphe Landry of France made similar observations on demographic patterns and population growth potential around 1934.^[7] In the 1940s and 1950s Frank W. Notestein developed a more formal theory of demographic transition.^[8] By 2009, the existence of a negative correlation between fertility and industrial development had become one of the most widely accepted findings in social science.^[4]

The four stages of demographic transition mentioned by Max are explained as follows:



First Stage:

This stage has been called high population growth potential stage. It is characterised by high and fluctuating birth and death rates which will almost neutralize each other. People mostly live in rural areas and their main occupation is agriculture which is in the stage of backwardness. The tertiary sector consisting of transport, commerce banking and insurance is underdeveloped.

Second Stage:

It is called the stage of Population Explosion. In this stage the death rate is decreasing while the birth rate remains constant at a high level. Agricultural and industrial productivity increases, means of transport and communication develops. There is great mobility of labour. Education expands. Income also increases. People get more and better quality of food products. Medical and health facilities are expanded.

During the stage economic development is speeded up due to individual and government efforts. Increased use of better technology, mechanization and urbanisation takes place. But there is no substantial change in the men, attitude of the people and hence birth rate stays high i.e., economic development has not yet started affecting the birth rate.

Due to the widening gap between the birth and death rates, population grows at an exceptionally high rate and that is why it has been called the population explosion stage. This is an "Expanding" stage in population development where population grows at an increasing rate, as shown in figure, with the decline in death rate and no change in birth rate.

Third Stage:

It is also characterised as a population stage because the population continues to grow at a fast rate. In this stage, birth rate as compared to the death rate declines more rapidly. As a result, population grows at a diminishing rate. This stage witnesses a fall in the birth rate while the death rate stays constant because it has already declined to the lowest minimum. Birth rate declines due to the impact of economic development, changed social attitudes and increased facilities for family planning. Population continues to grow fast because death rate stops falling whereas birth rate though declining but remains higher than death rate.

Fourth Stage:

It is called the stage of stationary population. Birth rate and death rate are both at a low level and they are again near balance. Birth rate is approximately equal to death rate and there is little growth in population. It becomes more or less stationary at a low level.

Demography:

Take a minute and think about major cities in the United States. There are some regions of the U.S., such as the Northeast and Southwest, that have very large cities. On the other hand, there are areas of the U.S., such as the Midwest, that have much smaller cities. This example of uneven distribution would be a topic of demography, which is the study of the size, density, and distribution of the human population. This area of study takes into account birth rates, death rates, age distribution, and any other factors that influence the size and growth of a population.

Define demographic transition:

Demographic transition (DT) refers to the transition from high birth and death rates to lower birth and death rates as a country or region develops from a pre-industrial to an industrialized economic system.

What is the meaning of demographic transition?

The demographic transition model, in isolation, can be taken to predict that birth rates will continue to go down as societies grow increasingly wealthy; however, recent data contradicts this, suggesting that beyond a certain level of development birth rates increase again.^[4] In addition, in the very long term, the demographic transition should be reversed via evolutionary pressure for higher ~~fecundity~~ fertility and higher ~~mortality~~ mortality. Over the course of human history, there have been many people who have been interested in the characteristics of the human population and the future of population growth. After analyzing how western populations have changed over time, one pattern was discovered that indicated there was a connection between population growth and the economic development of a country. It was observed that in countries with high standards of living, the population grew at a slow rate, while in countries with low standards of living, the population grew more rapidly.

Demographic transition theory:

The "Demographic Transition" is a model that describes population change over time. It is based on an interpretation begun in 1929 by the American demographer Warren Thompson, of the observed changes, or transitions, in birth and death rates in industrialized societies over the past two hundred years or so. By "model" we mean that it is an idealized, composite picture of population change in these countries. The model is a generalization that applies to these countries as a group and may not accurately describe all individual cases. Whether or not it applies to less developed societies today remains to be seen. The first stage of the demographic transition is the pre-industrial stage. During this stage, the population is stable, with both high birth rates and high death rates. The death rates are high because there is increased disease, minimal medical care, poor sanitation, and limited food supplies. As a result of the high death rate, people tend to produce more offspring to try to compensate for the mortality. Although the birth rate and death rate can fluctuate slightly, overall they remain equal, which results in zero population growth.

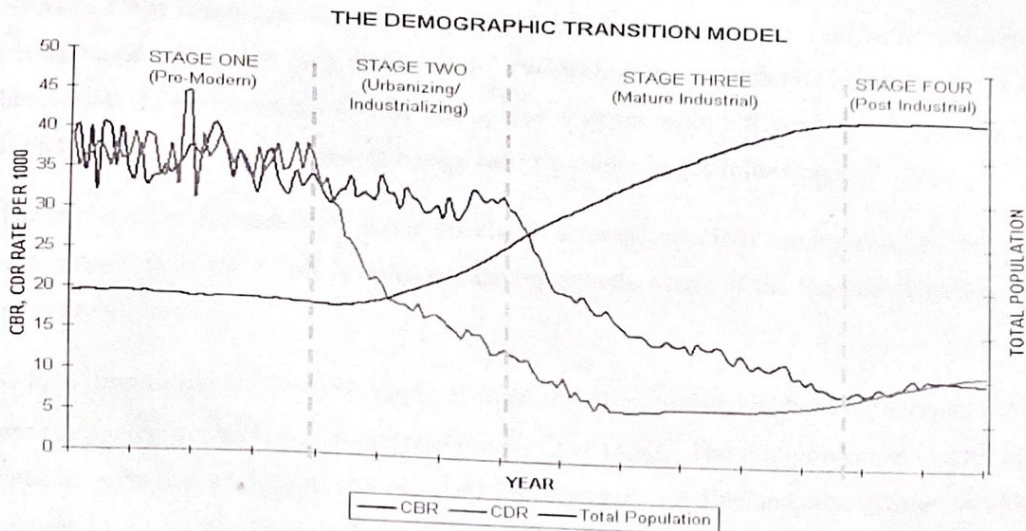
Stages of this theory:

1: Pre modern (High stationary)

2: Industry (early expanding)

3: Late expanding

4: Low stationary



STAGE ONE is associated with pre Modern times, and is characterized by a balance between birth rates and death rates, which applied to most of the world before the Industrial Revolution, both birth rates and death rates are high. As a result, population size remains fairly constant but can have major swings with events such as wars or pandemics. This situation was true of all human populations up until the late 18th.C. when the balance was broken in western Europe. Note that, in this stage, birth and death rates are both very high (30-50 per thousand). Their approximate balance results in only very slow population growth. Over much of pre-history, at least since the "Agricultural Revolution" 10,000 years ago, population growth was extremely slow. Growth rates would have been less than 0.05%, resulting in long doubling times of the order of 1-5,000 yrs

Characteristics

Stage One is sometimes referred to as the "High Stationary Stage" of population growth ("high" birth and death rates; "stationary" rates and "stationary" total population numbers).

Death rates were very high at all times in this stage for a number of reasons, including:

- Lack of knowledge of disease prevention and cure;
- occasional food shortages.

STAGE TWO sees a rise in population caused by a decline in the death rate while the birth rate remains high, or perhaps even rises slightly. The decline in the death rate in Europe began in the late 18th.C. In northwestern Europe and spread over the next 100 years to the south and east. Data from Sweden clearly show this stage (and two other stages following it):

The introduction of modern medicine lowers death rates, especially among children, while birth rates remain high; the result is rapid population growth. Many of the least developed countries today are in Stage 2.

- First, improvements in food supply brought about by higher yields as agricultural practices were improved in the Agricultural Revolution of the 18th.C. These improvements included crop rotation, selective breeding, and seed drill technology. In England, the greater wealth this brought about enabled people to marry earlier, thus raising the birth rate slightly at the same time. Another food related factor was the introduction of the potato and maize (corn) from the Americas. These new crops increased the quantity of foodstuffs in the European diet, especially in northern Europe.

STAGE THREE Moves the population towards stability through a decline in the birth rate. This shift belies Malthus's belief that changes in the death rates were the primary cause of population change. Birth rates gradually decrease, usually as a result of improved economic conditions, an increase in women's status, and access to contraception. Population growth continues, but at a lower rate. In general the decline in birth rates in developed countries began towards the end of the 19th.C. in northern Europe and followed the decline in death rates by several decades.

In stage three, birth rates fall due to various fertility factors such as access to contraception, increases in wages, urbanization, a reduction in subsistence agriculture, an increase in the status and education of women, a reduction in the value of children's work, an increase in parental investment in the education of children and other social changes. Population growth begins to level off. The birth rate decline in developed countries started in the late 19th century in northern Europe. In Stage 3 of the Demographic Transition Model (DTM), death rates are low and birth rates diminish, as a rule accordingly of enhanced economic conditions, an expansion in women's

status and education, and access to contraception. The decrease in birth rate fluctuates from nation to nation, as does the time span in which it is experienced.^[14] Stage Three moves the population towards stability through a decline in the birth rate.^[15] Several fertility factors contribute to this eventual decline, and are generally similar to those associated with sub-replacement fertility, although some are speculative:

- In rural areas continued decline in childhood death means that at some point parents realize they need not require so many children to be born to ensure a comfortable old age. As childhood death continues to fall and incomes increase parents can become increasingly confident that fewer children will suffice to help in family business and care for them in old age.
- Increasing urbanization changes the traditional values placed upon fertility and the value of children in rural society. Urban living also raises the cost of dependent children to a family. A recent theory suggests that urbanization also contributes to reducing the birth rate because it disrupts optimal mating patterns. A 2008 study in Iceland found that the most fecund marriages are between distant cousins. Genetic incompatibilities inherent in more distant out breeding makes reproduction harder.^[16] both rural and urban areas, the cost of children to parents is exacerbated by the introduction of compulsory education acts and the increased need to educate children so they can take up a respected position in society. Children are increasingly prohibited under law from working outside the household and make an increasingly limited contribution to the household, as school children are increasingly exempted from the expectation of making a significant contribution to domestic work. Even in equatorial Africa, children (age under 5) now required to have clothes and shoes, through the body, and may even require school uniforms. Parents begin to consider it a duty to buy children(s) books and toys, partly due to education and access to family planning, people begin to reassess their need for children and their ability to grow them. A major factor in reducing birth rates in stage 3 countries such as Malaysia is the availability of family planning facilities, like this one in Kuala Terengganu, Terengganu, Malaysia.

- Increasing literacy and employment lowers the uncritical acceptance of childbearing and motherhood as measures of the status of women. Working women have less time to raise children; this is particularly an issue where fathers traditionally make little or no contribution to child-raising, such as southern Europe or Japan. Valuation of women beyond childbearing and motherhood becomes important.
- Improvements in contraceptive technology are now a major factor. Fertility decline is caused as much by changes in values about children and gender as by the availability of contraceptives and knowledge of how to use them.

There are several factors contributing:

- 1) In rural areas continued decline in childhood death means that at some point parents realize they need not require so many children to be born to ensure a comfortable old age.
- 2) Increasing urbanization changes the traditional values placed upon fertility and the value of children in rural society.

STAGE FOUR

In this stage the population age structure has become older. During stage four there are both low birth rates and low death rates. 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. By the late 20th century, birth rates and death rates in developed countries leveled off at lower rates.

What is the Demographic Transition Model?

The Demographic Transition Model (DTM) is based on historical population trends of two demographic characteristics – birth rate and death rate – to suggest that a country's total population growth rate cycles through stages as that country develops economically. Each stage is characterized by a specific relationship between birth rate (number of annual births per one thousand people) and death rate (number of annual deaths per one thousand people). As these

Limitations of the Demographic Transition Model

Like any model, there will be outliers and exceptions to the rule and the Demographic Transition Model is no different. Additionally, there are things the DTM cannot reveal: the impact of other demographic variables such as migration, are not considered, nor does the model predict how long a country will be in each stage. But even so, the relationship between birth rate and death rate is an important concept when discussing population and any patterns, such as those provided by the DTM, that aid in understanding are helpful.

Demographic Transition in Pakistan

It is often said that Islam is the fastest- growing religion in the world. This statement is true because of the pace of demographic transition in the Muslim-majority countries relative to the rest of world. Middle east and North Africa (MENA) region, the largest concentration of Muslim population (Above 90%), experienced rapid mortality decline during the second half of the 20th century whereas fertility rate remained high and population growth reached to its peak of 3.0 % per year in 1980's but at the same time the growth rate for the world reached its peak of 2.0 % annual growth rate more than a decade earlier. Iran, Lebanon, Tunisia and Turkey have completed their demographic transition and their total fertility rate (TFR) reached below 2.1 (replacement level) but at the same time their population is continued to increase in the coming decades due to young age structure owing to high fertility in the past. The speed of population growth will be faster in countries that are in the early or middle stages of demographic transition. TFR of Pakistan (3.6) is the second highest after Nigeria (TFR=5.9) in the top ten largest Muslim populations. It is difficult to predict the pace of demographic transition of a country and Iran surprised the world through dropping its TFR from 5.6 in 1985 to 2.0 in 2000- the fastest decline in the world (Fahimi, May et al. 2013).Pakistan is lagging in successful completion of demographic transition due to the influence of religion, male dominated society and family system. (Mahmood 2014)

Pakistan has a unique position in the demographic transition. Pakistan has passed rapidly the first stage of the demographic transition with the transfer of advanced medical facilities from the advanced countries whereas Pakistan is lagging in passing through the second stage of

demographic transition and is still in the early phase of second stage in which birth rate begins to decline.

Recent Pakistan and Demographic and Health Survey 2012-2013 also indicated that total fertility rate in Pakistan is not decreasing as rapidly as expected and it is still at 3.8, contrary to its expectation at 3.2. (Weeks 2014) Pakistani society is showing resistance in using family planning methods for diminishing the family size due to the religion influence. Ulemas (religious scholars) preach in their sermons that limiting family size through using family planning method is a great sin and those who will commit this sin will be burnt in the hell . Developed nations transferred the advanced medical facilities for reducing mortality in Pakistan but these nations could not reduce the fertility rate that is being monitored by socio-cultural and socio-economic factors rather than medical factors due to the religion influence and other related factors which we discussed earlier in the section 2.1.5.6. Economic and social drivers of fertility drop are complex (Zaninetti, 2011 p. 78-81).

At present, Pakistan is passing through a critical situation and we cannot precise the exact time period for Pakistan to pass through the demographic transition. Pakistan may take long time to pass the process of demographic transition due to the attitude of Pakistani society towards limiting family size. We should be optimistic after observing rapid population decline in other conservative Muslim countries, e.g. Iran. For the successful demographic transition in Pakistan, there is dire need to acquire cooperation of Pakistani Ulemas, increasing the literacy level, creating the awareness of family planning, and providing the unmet need of family planning methods. (Mahmood 2014)