POPULATION AND SOCIETY

VI SEMESTER

CORE COURSE

BA SOCIOLOGY

(2011 Admission onwards)

UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

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UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

STUDY MATERIAL

Core Course

BA SOCIOLOGY

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POPULATION AND SOCIETY

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MODULE 1

Population Studies

1.1 Population studies

Population is not the study of population but it is meant for the population awareness and population consciousness of the bad effects of population growth and its remedial measures. It is the education about population growth and its remedial measures. It is the education about population matter like fertility, mortality and migration and its remedial measures to check the rapid growth of population. It aims at the growth of the qualitative life of the people. In the various fields of healthcare, a **population study** is a study of a group of individuals taken from the general population who share a common characteristic, such as age, sex, or health condition. This group may be studied for different reasons, such as their response to a drug or risk of getting a disease. Population studies are broadly defined as the scientific study of human populations. Major areas studied include broad population dynamics; fertility and family dynamics; health, aging, and mortality; and human capital and labor markets. Researchers in population studies also focus on methodology. Population studies is an interdisciplinary area of study; scholars from demography, epidemiology, sociology, economics, anthropology, and various other disciplines study populations.

Definition of the Population studies

A **population** is a summation of all the organisms of the same group or species, who live in the same geographical area, and have the capability of interbreeding. Defined population studies are designed to measure the impact of an intervention in a defined target population (i.e. women, racial and ethnic minorities). These studies can provide further validation of the methods utilized and information about whether or not an intervention works in various population groups.

Populations studies help determine how governments allocate their funds and where aid resources go. The fields of advertising and economics also use demography statistics to a large extent. Because most of the information used in population studies come from surveys, it's important for people to respond to them and give accurate answers. This is especially true regarding government census surveys. The analyzed results are often used to advocate for disadvantaged groups of people by researchers and independent organizations as well as government agencies. They can help determine policies and decide which town gets a new health clinic or job creation resources.

Nature of the Population studies

Population studies helps and enables us to be aware of the process and consequence of population growth on the quality of our lives and the environment. The child gets and opportunity to investigate and explore the interaction between the population and their environments, population characteristics, the meaning, the nature of process. The child also knows the causes and consequences of population increase at the local. national level. It is multidisciplinary concept and related to number of subjects. It neither provides nor prescribes any contraceptive education or any other measures to limit the size of the family.

Under population studies three main aspects are covered namely, size, composition and distribution of population.

1. Size: In connection with size, the study is taken which deals with such problems as to how many people live in a given population group, what changes are taking place in the size of the group and how these changes are affected.

2. Composition: It covered all the measurable characteristics of the people who form a given population. The composition of two groups are differs number of ways. The characteristics must be effectively related to demographic processes and that these must be relevant to his attempt to understand certain specific aspects of national life. Age,and sex are most widely used characteristics of population study.

3. Distribution: Population distribution study is concerned with such matters as to how is the people distributed and what is the nature of changes in population distribution.

Subject Matter and Scope of the population studies

The scope of population studies is quite wide. Population study provides the learners with a knowledge and understanding of the prevailing population situation in their own country and the world. It also creates an awareness among the learners about the inter-relationships between population situation in their own country and the world. It assists us to make conscious rational and informed decisions regarding family size and population matters in the community and policy adopted by the Sate. It equips us with necessary knowledge, skills, attitudes, values to ascertain and evaluate the impact of population change both in terms of the students future, welfare and the welfare of their community, society, nation and the world. Population studies the nature, causes, changes, characteristics, co-operation and distributional aspects of human population. It studies the relationships of man with his environment along with his quality of life.

On the one hand, this subject is concerned with a quantitative study of the size, structure characteristics and territorial distribution of human populations and the changes occurring

in them. On the other hand, it is concerned with the study of the underlying causes of population phenomena. Thus, a student of population is engaged in describing and comparing the size, structure, characteristics and territorial distribution of the population, and the changes occurring in it through the study of fertility, mortality, migration and social mobility. He also attempts to explain population phenomena and situations and the changes in them in the context of the biological, social, economic and other setting. For instance, population phenomena take place in a social setting and cannot be studied in isolation.

Hence, while describing, comparing or explaining the determinants and consequences of population phenomena, social phenomena have to be taken into consideration. It can be seen that the study of population is multidisciplinary in nature, involving an understanding of biology, genetics, mathematics, statistics, economics, sociology, cultural anthropology, psychology, politics, geography, medicine, public health, ecology, etc. It is also implied in this description that the subject matter of population studies includes the study of fertility, mortality, migration and social mobility, that is, the components of change in the size, structure, characteristics and distribution of population.

In short, The qualitative study of population. That is, it deals with size, structure, characteristics and territorial distribution of a human population. Further, Fertility, mortality, migration and social mobility also included its study area. The study of population is multidisciplinary in nature. It deals with all other sciences and its relationship.

1.2 Relation of population studies with other social sciences:

1. **Demography:** The discipline of the study of population is known by two terms; population studies and demography. Population studies deals with population. Demography deals with people. It derived from Greek word 'Demos' that means people. That is demography is scientific study of population. Demography mainly concerned with the study of the components of population, population variation and change. Population studies concerned with relationship between population changes and variables. According to Philip M Hauser and Dudley Duncan, "Demography is the study of the size, territorial distribution and composition of population changes, which may be identified as fertility, mortality, territorial movement and social mobility". The major objectives of the demography are to achieve knowledge of the size, organization and distribution of the population. To describe the past evolution of population in an area. To predict the future demographic evolution.

2. **Sociology:** Population studies primarily studies and is concerned with collecting materials about biological, economic and social problems. Sociology believes that

man is a social animal and it deals with the scientific study of the society. Similarly population studies also accepts human being as a unit of a society. Population studies is not accepted and treated by sociologists as merely a subject dealing with collection of figures, but treats it as a subject most needed for understanding social reactions. In fact, both the subjects study the problems related to birth, death, marriage, divorce, customs and traditions etc. This relation between two subjects is bound to be close because both deal with society and human beings. Unless there is a society, there can be no population studies.

In spite of this close relationship, there are many points of difference between the two as well. Population studies is quantitative, sociology is qualitative in nature. Population studies is a subject where whole data is divided into small units and each unit is then studied scientifically and analytically in its own way whereas sociology first combines small units that is, religion, language, marriage etc, into one big whole and studies the same.

3. **Economics:** Relationship between population studies and economics had considerably increased during 20th century and both the subjects have come quite closer and nearer to each other. Today population studies considered as a branch of economics. Economics studies economic problems of the people, and in these population studies play a vital role. Where there is more population, economic activities are bound to increase. Population studies influences economics in two important ways. On the one hand, it as means of labour force, becomes source of production whereas on the other hand changes in population influence labour force and source of production. Every economic activity aims at the welfare of the people.

1.3 Sources of Population Data:

CENSUS: A census of population may be defined, as the total process of collecting, compiling and publishing demographic, economic and social data pertaining at a specified time of times, to all persons in a country. The census is the collection of information about birth, death, occupation, social and economic conditions of the people. A **census** is the procedure of systematically acquiring and recording information about the members of a given population. It is a regularly occurring and official count of a particular population. The term is used mostly in connection with national population and housing censuses; other common censuses include agriculture, business, and traffic censuses. The United Nations defines the essential features of population and housing censuses as "individual enumeration, universality within a defined territory, simultaneity and defined periodicity", and recommends that population censuses be taken at least every 10 years. United Nations

recommendations also cover census topics to be collected, official definitions, classifications and other useful information to coordinate international practice. According to V.M. Dandakar, " A census of population is the total process of collecting, compiling, evaluating, analyzing and publishing demographic, economic and social data pertaining at a specific time, to all persons in a country or in a well delimited part of the country." Census has become a very popular method of collecting information about the people. It helps not only in collecting figures but is also much more informative beyond that. It provides information about the economy of the nation, rate of birth and death, rural-urban migration, living standard of the people, family size, educational achievements, etc. The word is of Latin origin; during the Roman Republic, the census was a list that kept track of all adult males fit for military service. The modern census is essential to international comparisons of any kind of statistics and censuses collect data on many attributes of the population, not just how many people there are, although population estimates remain an important function of the census.

History

Our Redeemer Lutheran Church, Encyclopaedia Britannica and Roman Empire explain that the English word "census" comes from the Latin word "censere." Ancient Romans used this term to refer to the official population count of the Roman empire. The Caesars of ancient Rome used this census information not only for tax purposes, but also to get an idea of how the Roman empire was expanding. Similar census took place in nations and empires such as China, Egypt and Palestine. It was this kind of Roman census that, according to Christian theology, brought Mary and Joseph into Bethlehem, where Jesus Christ was born. For the Romans, the census was especially important because registering in the census established a Roman citizen's position within the Roman social hierarchy and ensured that Roman officials would not seize the citizen's property or sell him into slavery. It also gave the Roman people a sense of unity and nationality, which was crucial to their culture. What people think of as the "modern census" with extremely specific demographic information really did not evolve until the 17th and 18th centuries.

Importance

In the United States, the population census is especially important because the government uses census data to determine how much funding to allot to specific programs, according to the United States Census Bureau. Other census are important for business operations and manufacturing, controlling wildlife, determining areas of need in communities and establishing laws and regulations.

Uses of Census data

In the nineteenth century, the first censuses collected paper enumerations that had to be collated by hand so the statistical uses were very basic. The government owned the data and was able to publish statistics themselves on the state of the nation. Uses were to measure changes in the population and apportion representation. Population estimates could be compared to those of other countries.

By the beginning of the twentieth century, censuses were recording households and some indications of their employment. In some countries, census archives are released for public examination after many decades, allowing genealogists to track the ancestry of interested people. Archives provide a substantial historical record which may challenge established notions of tradition. It is also possible to understand the societal history through job titles and arrangements for the destitute and sick.

As governments assumed responsibility for schooling and welfare, large government departments made extensive use of census data. Actuarial estimates could be made to project populations and plan for provision in local government and regions. It was also possible for central government to allocate funding on the basis of census data.

Even into the mid twentieth century, census data was only directly accessible to large government departments. However, computers meant that tabulations could be used directly by university researchers, large businesses and local government offices. They could use the detail of the data to answer new questions and add to local and specialist knowledge.

Now, census data are published in a wide variety of formats to be accessible to business, all levels of governance, media, students and teachers, charities and researchers, and any citizen who is interested. Data can be represented visually or analysed in complex statistical models, to show the difference between certain areas, or to understand the association between different personal characteristics. Census data offer a unique insight into small areas and small demographic groups which sample data would be unable to capture with precision.

2. Vital Statistics: Vital statistics are perhaps the most widely used national, state, and local data for identifying and addressing major public health issues. In the United States, legal authority for the registration of vital events (births, deaths, marriages, divorces, fetal deaths, and induced terminations of pregnancy [abortions]) resides with the states, and individually with New York City, the District of Columbia, and the U.S. territories. The states are the legal proprietors of these data and are responsible for maintaining registries and issuing copies of the records.

Registration of vital events or collection of vital statistics has its own background. In the past, the registration of vital events in most European countries was done by church and other religious bodies. It may be mentioned that till 1662 no use was officially made by the government of vital statistics. Dr.William Carr spent years of his active life for the development of national system of vital statistics and conducted several studies on health and mortality conditions. The system developed by him was followed by many countries of Europe. Today almost every country is collecting vital statistics. Providing information about vital events is now a legal obligation.

The History of Vital Statistics

The registration of births, marriages, and deaths has a long history in the United States, beginning with registration laws enacted by the Grand Assembly of Virginia in 1632 and the General Court of the Massachusetts Bay Colony in 1639. In enacting this legislation, the early settlers, who were predominantly English, were following English customs. Thus, Virginia law required the clergy to keep a record of all christenings, marriages, and burials in their parishes. The Massachusetts law differed from Virginia's in two important respects: it called for the recording of vital events (births, deaths, and marriages) rather than church-related ceremonies; and it placed responsibility for registration of vital events on government officials rather than the clergy. Little or no statistical use was made of such records, however—along with wills and property inventories, they were regarded primarily as statements of fact essential to the protection of individual rights, especially those relating to the ownership and distribution of property.

The impetus for the use of vital records as the basis of a public health data system came from the realization that records of births and deaths, particularly records of deaths by cause of death, could provide information needed for the control of epidemics and the conservation of human life through sanitary reform. The origin of vital statistics in the modern sense can be traced to an analysis of the English bills of mortality published by John Graunt in 1662. Similarly, the clergyman Cotton Mather noted, in 1721, during a severe smallpox epidemic in Boston, that more than one in six of the natural cases died, but only one in sixty of the inoculated cases died.

In the nineteenth century, the industrial revolution resulted in rapid urbanization, overcrowding of cities, and a deterioration of social and living conditions for large sectors of the population. Public health reformers became acutely conscious of the need for general sanitary reform as a means of controlling epidemics of disease, particularly cholera. These early sanitarians used the crude death statistics of the time to arouse public awareness of the need for improved sanitation, and in the process they pressed for more precise statistics through effective registration practices and laws. The work of Edwin Chadwick (1800–1890) and Dr. William Farr (1807–1883) in England and of Lemuel Shattuck (1793–1859)

in Massachusetts was instrumental in the development of public health organization and practice, including the recording of vital statistics. Thus, the history of public health is largely the history of vital registration and statistics.

The United States Constitution provided for a decennial census but not a national vital registration system. To obtain national data on births, marriages, and deaths, the decennial censuses in the latter half of the nineteenth century included questions about vital events, such as: "Born within the year," "Married within the year," and "Disease, if died within the year." These census items were soon recognized as inefficient and the results as deficient. Therefore, when the Bureau of the Census was made a permanent agency of the federal government in 1902, the enabling legislation authorized the bureau to obtain annually copies of records filed in the vital statistics offices of those states and cities having adequate death registration systems and to publish data from these records. This marked the birth of the National Vital Statistics System. Ten states and cities provided death records to the Census Bureau in 1902. In 1915, birth registration was added to the system, and by 1933 all states were registering live births and deaths and providing the required data.

In 1946 responsibility for collecting and publishing national vital statistics was transferred from the Census Bureau to the U.S. Public Health Service, first in the National Office of Vital Statistics and later (1960) in the National Center for Health Statistics (NCHS). In 1987 NCHS became part of the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services.

vital statistics, primarily records of the number of births and deaths in a population. Other factors, such as number of marriages and causes of death, by age groups, are regularly included. From these records can be computed birthrates and death (or mortality) rates from which trends are determined. The earliest known system of vital statistics was in China. In England the clergy was required as early as the 16th cent. to keep records of christenings, marriages, and burials; during the 17th cent. the clergy in France, Italy, and Spain began to keep similar records. The oldest continuous national records system is that of Sweden (since 1741). The clergy and government officials in the colonies of North America began to record vital statistics in the 17th cent.; on a national level, the U.S. government started publishing annual records of deaths in 1900 and of births in 1915. The most striking trend shown by recent vital statistics is the rapid increase of the populations of nonindustrial countries due to a sharp decline in the mortality rate and an acceleration of the birthrate.

3. Sample Survey: This is another technique developed to collect primary data of interest to demographers, economists, anthropologists and other social scientists. That is, another method of data collection for population studies. In this, information is collected only from a sample of the population, which is representative of the whole and from which conclusions are drawn by the use of scientific methods. Since independence, the data on

rural lives through these surveys have been collected on a great variety of topics in diverse field of social sciences including demography, sociology etc. The collection of data is mainly through three ways. That is, the survey conducted by National Sample Survey organization, city surveys sponsored by the research programmes committee of the planning commission and the demographic fertility and family planning surveys which have acquired popularity. The NSS a permanent organization established in 1950 with the board objective of obtaining a continues comprehensive information on social, economic, demographic and agricultural characteristics on entire country.

4. Dual Report System: Dual reporting system is another source of data collection. In many developing countries birth and death rates are incomplete and inaccurate. In order to get accurate data, the system of dual report has been introduced. In this system, each event is enumerated by two independent procedures; one is that of registration and the other is that of sample survey. The design of this system is based on an appropriate number of small geographic samples. In each of these sample areas, a continuous record is kept of the events of births and deaths as they occur. In the sample area, information about births and deaths along with the other relevant information is collected through periodic retrospective sample surveys. In 1963-64, a new system called the sample registration system was initiated in India, in which the technique of the dual report system was used.

5. Population Registers: Demographers use secondary data for their work. Population register is important secondary source of data collection. In many European countries maintenance of permanent population register, for certain administrative and legal reasons is considered absolutely necessary. The figures collected at the time of census are verified by it and gaps filled in where necessary. These also clarify population trends. This type of register is most perfectly maintained in Sweden. This register is prepared annually and on its basis itself matters regarding franchise, settlement and employment etc., are settled. In countries like Israel, Belgium, Korea, etc., population registers are important source of information. In this, name of every person in the country is entered along with some migratory movements of persons. It always help to know about the current information on such demographic problems as population size, vital events and internal migration.

6. International Publications: International publications are considered as important data source about population. UNO and other international organizations which contain very useful information about countries spread over different parts of the world. Demographic Year Book which is annually published by UNO. It contains information about population, size, area, density, population growth, population growth, fertility, mortality etc. Statistic Year Book is another publication about it. In world health organization bring out a monthly publication entitled, Epidemiological and Vital Records which contains information about many countries of the world on public health and mortality.

Module 2

THEORIES OF POPULATION

2.1 Malthusian Theory

Malthus thought that the dangers of population growth precluded progress towards a utopian society: Thomas Malthus was the first economist to declare a methodical doctrine of population in the year 1798. This theory was regarded a highly contentious since it had many incorrect senses with the economic changes that occurred in Europe in 19th and 20th century. *Malthusian Theory Explained Malthus became widely known for his theories about change in population. His An Essay on the Principle of Population observed* that sooner or later population will be checked by famine and disease. He wrote in opposition to the popular view in 18th-century Europe that saw is indefinitely greater than the power in the earth to produce subsistence for man". As a cleric, Malthus saw this situation as divinely imposed to teach virtuous behaviour.

Malthus appalled against the existing sanguinity shared by his father and Godwin that an ideal state could be accomplished if human fetters could be isolated. Malthusian hostility was that the heaviness of mounting population on the food supply would devastate perfection and there would be depression in the world. Malthus was relentlessly censured for his cynical outlook which directed him to trek on the continent of Europe to congregate statistics in sustaining his hypothesis. Malthusian Theory elucidates the affiliation amidst the growth in food supply and in population. It declares that population amplifies quicker than the food supply and if unimpeded it would consequent to desolation. In order to have a clear understanding of Malthus' 'Principle,' it is necessary to look closely at the logic underlying his argument. He stated that population increases 'geometrically' or exponentially and that subsistence increases arithmetically. Thus, population increases along the order of 1, 2, 4, 8, 16, 32..., whereas subsistence limps along at the rate of 1, 2, 3, 4, …. . That is, according to Malthusian theory of population, population increases in a geometrical ratio, whereas food supply increases in an arithmetic ratio. This disharmony would lead to widespread poverty and starvation, which would only be checked by natural occurrences such as disease, high infant mortality, famine, war or moral restraint. His main contribution is in the agricultural sector. According to this theory there are two steps to control the population: preventative and positive checks. Preventative means control in birth rate, and uses of different methods to control birth; and positive checks means natural calamities,war,etc

That is in short, his principles are:

1. There are natural combining of genetic traits in human beings to increase at a fast rate. As a consequence, increase in population in statistical sequence if unimpeded two-folds itself every 25 years.

2. On the other hand, the food supply increases in a slow numerical sequence due to the function of that law of diminishing returns based on the presumption that the supply of land is invariable.

3. Since population increases in statistical progression and the food supply in the numerical sequence, population is likely to elude food supply. Thus an imbalance is created which directs to over populace.

4. To control over population consequent from imbalance of food and populace, Malthus proposed preventive measures and optimum checks.

The preventive measures such as control of birth rate, late marriage, celibacy, ethical moderation etc. has to be taken by man in order to control population. This was requested by Malthus to his countrymen to avoid depression. His theory was wrong because Malthus only considered two factors when he established his basic graph: food supply and population growth. Other factors such as improvements in technology proved him wrong. He was right at his time but development made him wrong. Moral restraint, vice and birth control were the primary preventative checks. Moral restraint was the means by which the higher ranks of humans limited their family size in order not to dissipate their wealth among larger numbers of heirs. For the lower ranks of humans, vice and birth control were the means by which their numbers could be limited - but Malthus believed that these were insufficient to limit the vast numbers of the poor.

The positive checks were famine, misery, plague and war; because preventative checks had not limited the numbers of the poor, Malthus thought that positive checks were essential to do that job. If positive checks were unsuccessful, then inevitably (he said), famine would be the resulting way of keeping the population down. Before starvation set in, Malthus advised that steps be taken to help the positive checks to do their work. He wrote:

It is an evident truth that, whatever may be the rate of increase in the means of subsistence, the increase in population must be limited by it, at least after the food has been divided into the smallest shares that will support life. All the children born, beyond what would be required to keep up the population to this level, must necessarily perish, unless room be made for them by the deaths of grown persons. ... To act consistently, therefore, we should facilitate, instead of foolishly and vainly endeavouring to impede, the operation of nature in producing this mortality, and if we dread the too frequent visitation of the horrid form of famine, we should sedulously encourage the other forms of destruction, which we compel nature to use.

Instead of recommending cleanliness to the poor, we should encourage contrary habits. In our towns we should make the streets narrower, crowd more people into the houses, and court the return of the plague. In the country we should build our villages near stagnant pools, and particularly encourage settlements in all marshy and unwholesome situations. But above all, we should reprobate specific remedies for ravaging diseases: and those benevolent, but much mistaken men, who have thought they were doing a service to mankind by projecting schemes for the total extirpation of particular disorders. If by these and similar means the annual mortality were increased ... we might probably every one of us marry at the age of puberty and yet few be absolutely starved. In Malthus' opinion, the masses were incapable of exercising moral restraint, which was the only real remedy for the population problem. They were therefore doomed to live always at bare subsistence level. If all income and wealth were distributed among them, it would be totally wasted within one generation because of profligate behaviour and population growth, and they would be as poor and destitute as ever. Paternalistic attempts to help the poor were therefore highly likely to fail. Also, they were a positive evil because they drained wealth and income from the higher (and therefore more moral) ranks of society. These people were responsible - either in person or through patronage - for all the great achievements of society: art, music, philosophy, literature and so on owed their existence to the good taste and generosity of these people. Taking money from them to help the poor would deprive the world of culture.

Criticism

The Malthusian Theory had the following Criticisms. The geometrical and arithmetical theory was incorrect regarding population and food supply. He failed to anticipate the opening up of new areas in other countries like US, Australia and Argentina which had extensive farming. His law of mathematical progression regarding food supply pertain to any one point of time and not as a whole. One of the chief weakness of this theory is he failed to evaluate the man power. Malthusian failed to analyse and compare populace with the national wealth, instead he compared just with the food supply. Malthus only requested his men to control birth rate and was one sided. He failed to look into death rate which is diminishing which is the ultimate cause of population. In reality pragmatic evidence substantiates this thesis to be incorrect. Actually the population has to be matched up with the per capita income since when this increases, the fertility rate is lowered and the population rate declines. Preventive measures cannot be taken in the case of ethical moderation, late marriage, celibacy etc. to control population rate. Thus Malthus is regarded as a false mystic.

Its Applicability

Despite weakness, Malthusian doctrine contains much truth. This thesis may not be applicable to the countries like England and Europe but for some other countries which has

a meagre landscape. In fact, the people of Europe were made miser by Malthus who forewarned them of the evils of the over populace. The very fact that people use preventive measures like late marriage, birth rate control on an extensive scale and various other contraceptives evidences the significance of the Malthusian Law. Thus Malthusian thesis is applicable to the countries like India. Walker was right when he wrote "The Malthusian Theory is applicable to all communities without any consideration of colour and place. Malthusian has stood unshattered, impregnable amid all the controversy that has regard around it."

2.2 Optimum population Theory

The Optimum theory of population was propounded by Edwin Cannan in his book "Wealth" Published in 1924 and popularised by Robbins, Dalton and Carr-Saunders. Unlike the Malthusian Theory, the optimum theory does not establish relationship between population growth and food supply. Rather it is concerned with the relation between the size of population and production wealth.

Definitions

Robbins defines as "the population which just makes the maximum returns possible is the optimum population or the best possible population." Dalton defines as "Optimum population is that which gives the maximum income per head." Carr-Saunders defines as "that population which produces maximum economic welfare."

Postulations

The natural resources of a country are given at a point of time but they change over time. There is no change in techniques of production. The stock of capital remains constant. The habits and tastes of the people do not change. The ratio of working population to total population remains constant even with the growth of population. Working hours of labour do not change. Modes of business organisation are constant.

Thesis

Based on the postulations the optimum populace is that ultimate size of population which affords the utmost income per head. Any climb or dwindling in the size of the populace above or below the optimum stage will lessen earnings per head. Specified the stock of natural resources the technique of production and the stock of capital in a nation, there is an explicit size of population matching to the highest per capita income. Other things being equal, any divergence from this optimum sized populace will direct to a drop in the per capita income, the nation is under populated and it can give to boost its population till it attain the optimum level. Alternatively, if the rise in populace leads to lessen per capital income, the nation is over populated and requires a decline in population till the per capita income is maximised. This notion is shown in the pictorial representation as shown below.
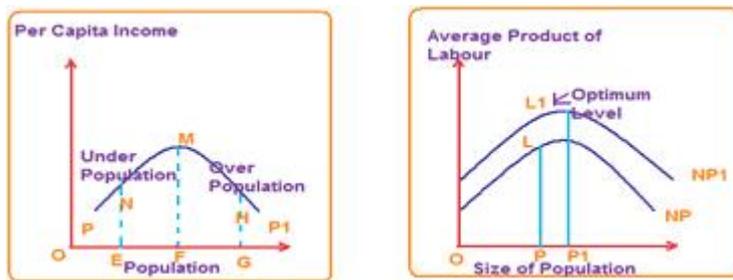
In the first sketch, OE populace is weighed along the horizontal axis and per capita income on the vertical axis. In the beginning there is under-population and per capita income rises with the growth in population. The per capita income is EN which is less than the maximum per capita income FM. The OF size of population represents the optimum level where per capita income FM is the maximum. If there is a continuous rise in population from OF to OG then the law of diminishing returns applies to production. As a consequent the per capita production is lowered and the per capita income also declines to GH due to increase in population. Thus FG represents over population. This is static version of the thesis. The per capita income is the highest at the point where the average product of labour starts falling. This is represented in the following sketch.

The size of population is measured on the horizontal axis and the average product of labour on the vertical axis. NP is the average product of labour or income per head curve. Up till the level OP increase in population direct to a rise in the average product of labour and the per capita income. Beyond OP, the average product of labour and per capita income drops. Hence when population is OP, the per capita income is the highest at point L. Thus OP is the optimum level of population. To the left of OP the country is over populated and beyond OP, it is over populated. However OP is not a fixed point. If due to inventions there are improvements in the techniques of production, the average product of labour might increase and push the level of per capita income upward so that the optimum point rises. This is represented in the diagram where NP1 curve represents the higher average product of labour and point L1 shows the maximum per capita income at the new optimum level of population OP1.

CRITICISM ON OPTIMUM THEORY
This theory has been criticized on the following grounds :

1. NO PRACTICAL VALUE :- It is not possible in practice to find the size of population less than or greater than optimum population.

2. NOT AN INDEX OF ECONOMIC DEVELOPMENT :- The size of population cannot be an index of economic development. If there is a continuous increase adverse effect on the economy.

3. QUALITY OF PEOPLE IGNORED :- This theory does not throw the light on the quality of people. An honest and educated society per capita out put will be more than others.

4. OTHER FACTORS IGNORES :- This theory ignores the social political and historical accident which are also essentials for economic development.

5. CONSTANT CHANGES :- The size of population is related to the national resources. Since the state of technology and resources are subject to constant changes. So its become very difficult to find out the optimum size of population.

2.3 Demographic Transition Theory

Demography is a science short on theory, rich in quantification. Nevertheless, demography has produced one of the best documented generalizations in the social sciences: the demographic transition. What is the demographic transition? Stripped to its essentials it is the theory that societies progress from a pre-modern regime of high fertility and high mortality to a post-modern regime of low fertility and low mortality. The cause of the transition has been sought in the reduction of the death rate by controlling epidemic and contagious diseases. Then, with modernization, children become more costly. Cultural changes weaken the importance of children. The increasing empowerment of women to make their own reproductive decisions leads to smaller families. Thus there is a change in values, emphasizing the quality of children rather than their quantity. In short, the fertility transition is becoming universal phenomenon, in which every country may be placed on a continuum of progress in the transition.

Human overpopulation is a serious global phenomenon that is still taking place today. The demographic transition theory explains one of the methods in which overpopulation can slowly decline as a nation develops.

Definition

The demographic transition theory is a model that tries to explain the stages of population growth for nations over a period of time. For example, before industrialization many nations had significant high death and birth rates; however, this allowed the population to remain stable. For example, before the industrialization of Great Britain, its population had both high death and birth rates.

By analyzing this value between death and birth rates and studying the growth of a population, theorists can evaluate how a nation increases in population based on its development. The demographic transition theory is often divided into four stages, however theorists also speculate that there may be a fifth or sixth stage. This article will speculate on the four stages. The demographic transition is a model and theory describing the transition from high birth and death rates to low birth and death rates that occurs as part of the economic development of a country. As countries industrialize, they undergo a transition during which death rates fall but birth rates remain high. Consequently, population grows rapidly. This transition can be broken down into four stages.

Stage One: The Pre-Industrial Stage

During the pre-industrial stage, societies have high birth and death rates. Because both rates are high, population grows slowly and also tends to be very young. Many people are born, but few live very long. In pre-industrial society, children are an economic benefit to families, reinforcing high birth rates. Children contribute to the household economy by carrying water and firewood, caring for younger siblings, cleaning, cooking, or working in fields and household chores. With few educational opportunities, raising children costs little more than feeding them. As they became adults, children become major contributors to the family income and also become the primary form of insurance for adults in old age.

Stage Two: The Industrial Revolution

In stage two, as countries begin to industrialize, death rates drop rapidly. The decline in the death rate is due initially to two factors: Improved food production and improved health and sanitation. Food production is improved by more efficient agricultural practices and better transportation and food distribution, which collectively prevent death due to starvation and lack of water. Health improves with improved sanitation, especially water supply, sewerage, food handling, and general personal hygiene, as well as medical progress. As death rates fall, birth rates remain high, resulting in a population explosion. Population growth is not due to increasing fertility, but to decreasing deaths: Many people continue to be born, but now, more of them live longer. Falling death rates also change the age structure of the population. In stage one; mortality is especially high among children between five and 10 years old. The decline in death rates in stage two improves the odds of survival for children. Hence, the age structure of the population becomes increasingly youthful. In Western Europe, stage two occurred during the nineteenth century, with the Industrial Revolution. Many less-developed countries entered stage two during the second half of the twentieth century, creating the recent worldwide population explosion.

Stage Three: Post-Industrial Revolution

During the post-industrial stage, birth rates fall, eventually balancing the lower death rates. Falling birth rates coincide with many other social and economic changes, including better access to contraception, higher wages, urbanization, commercialization of agriculture, a reduction in the value of children's work, and greater parental investment in the education of children. Increasing female literacy and employment lower the uncritical acceptance of childbearing and motherhood as measures of the status of women. Although the correlation between birth rates and these changes is widely observed, it is not certain whether industrialization and higher incomes lead to lower population or whether lower populations lead to industrialization and higher incomes. As birth rates fall, the age structure of the population changes again. Families have fewer children to support, decreasing the youth dependency ratio. But as people live longer, the population as a whole grows older, creating a higher rate of old age dependency. During the period between the decline in youth dependency and rise in old age dependency, there is a demographic window of opportunity

called the demographic dividend: The population has fewer dependents (young and old) and a higher proportion of working-age adults, yielding increased economic growth. This phenomenon can further the correlation between demographic transition and economic development.

Stage Four: Stabilization

During stage four, population growth stabilizes as birth rates fall into line with death rates. In some cases, birth rates may even drop below replacement level, resulting in a shrinking population. Death rates in developed countries may remain consistently low or increase slightly due to lifestyle diseases related to low exercise levels and high obesity and an aging population. As population growth slows, the large generations born during the previous stages put a growing economic burden on the smaller, younger working population. Thus, some countries in stage four may have difficulty funding pensions or other social security measures for retirees.   So how does the demographic transition model relate to overpopulation? In a sense, it can depict how developed nations can contribute to a lower emphasis on population growth by adhering to certain principles such as having couples focus on having fewer children. In developed regions where there are significant populations (such as China) it is important to mandate certain ideas (such as contraception) in order to minimize population growth. By having countries follow through these stages, one can understand how overpopulation can be minimized due to the improving healthcare for birth and death rates as well as certain ideology that couples follow.

CRITICISM

It is not a theory in the strict sense of the term because it is only a broad generalization and does not encompass the experience of even all the western countries. It even does not fully explain after economic recovery. The theory does not provide a theoretical explanation of fertility which is so necessary for any demographic study. It does not extract fundamental processes from a phenomenon and identify crucial variables. Another limitation of this theory is that it cannot be applied with confidence in the developing countries.

In short, we can conclude that the demographic transition theory is an excellent benchmark for describing the how populations in societies have changed remarkably. One of the warnings that this theory presents for developed nations in stage four is the risk these countries might face with its low birth and death rates. If countries do not have an increase in birth rates, they may have a negative population growth as a result. For example, if the United States does not have an emphasis on population growth, it may see a drop in its total population due to the current ideology of couples having a minimum amount of children due to their ideology or economic condition.

MODULE 3

STRUCTURE, CHARACTERISTICS AND DYNAMICS OF POPULATION

POPULATION DYNAMICS:

Population in a country is not static. Population changes from time to time. Population is influenced by many Fertility and the growth of population and decline in Population is known as Population Dynamics. Population of a country or in a place is influenced by physical, physiological and environmental factors. When, these factor one among these factor affect population positively or negatively population size, structure and composition will be affected. This process of change in the population size and structure is known as population dynamics. Facility, mortality and migration are the most influencing factors on population dynamics. Divorce, marriage age at marriage, widowhood and separation are also factor involved in population dynamics.

Fertility

Human fertility is responsible for biological population is known replacement and for the maintenance of human society. The growth of population depends on the human fertility. Fertility is a positive force through which the population expands.

The process of replacement of members through fertility is a complicated process, but the need and necessity of fertility was felt from the very beginning of society. Efforts were made through prayer and magic to make women fertile in primitive society. In some societies women without children were, considered as the cursed. Through medical treatment, efforts were made to maintain, for the continuation of human society. Fertility of women has become a matter of interest for social scientists after second world war.

The term fertility is generally used to indicate the actual reproductive performance of a women or group of women; Fertility starts with adulthood. The beginning of puberty is an indication of fertility. Thus fertility is, the actual reproductive performance applied to an individual /a group.

Bernard and Benjamin says:

"fertility measures the rate at which a population acts to it self by birth and it is normally assessed by relating the number of birth, but the size of some section of population, such as number of married couples and the number of women of child bearing age"

Barely states that : the fundamental notion of fertility is, actual level of reproductive performance in a population, based on the no. of live birth there occur.

In order to understand the concept of fertility, it is essential to analyse some important term related with fertility. These concepts are to be identified and to be defined.

Fecundity refer to the capacity of a man or woman or a couple to participate in reproduction. The fertility of an individual is limited by her or his fecundity. The term fecundity is biological . It refer to the maximum fertility level that can be obtained. On the other hand fertility is the actual reproductive performance. Fertility can be studied from the statistics of birth. There is no direct measurement for fecundity. Fecundity of an individual or a couple may be quite normal. But fertility performance may be low. Thus the term fertility indicate the actual level of reproductive performance influenced by the psychological, social, cultural, political and economic factors.

Natural fertility is fertility of human population that make no deliberate efforts to limit the birth. Fertility may be considered natural if no contraception or induced abortion is used. Prelonged breast feeding or abstinence after child birth causes in lowering fertility. The highest level of natural fertility is much below the level of biological maximum fertility. The levels of natural fertility differs from society to society.

Sterility may be used in connection with individual or group when a man or womon or a couple has not had a single child is considered sterile. In common practice sterility measures are associated only for women. Sterility can be natural (involuntary) or artificial (voluntary). But the term sterility is generally used to denote natural sterility.

Conception takes place when male sex cell, sperm is united with female sex cell, ovum. In fertilization a new cell called zygote is produced. Thus conception has a beginning of a long process of growth and development of child in uterus. Contraception refers to the measures taken in order to prevent conception in sexual intercourse. The contraceptive methods are also termed as birth control methods.

Family size refers the total number. of children of a woman or a couple born at a point of time. The completed family size indicates the total number. of children of a woman up to end of the reproductive period . The live birth of woman is classified according to the birth order. For e.g.: the I order birth, II order birth and so on . Women may be classified according to the number. of children born active to them. The first parity women are those who have given birth to one child. Parity refers to the mother.

The factors affecting fertility:

The birth of a child is a biological process. But it is influenced by customs, values and norms. The biological limits in fertility are associated with sex and age. Only women can conceive and give birth to children within a certain age limit. A woman become biologically fecund with beginning of menstruation. Her capacity of bearing children comes to an end when menstruation stops. Women can bear normally from the age 15 to 49 years. The reproductive span of women is 32-35 years. The reproductive span of males is not well defined. It is generally found to be longer than that of women.

There are several factors influencing fertility. the factors are generally categorized into physiological and socio-cultural factors.

1.Physiological Factors:

The most important physiological factors are:

a)Adolescent sterility:

Certain degree of adolescent sterility is observed for girls below age of 13-17 years. This is because of irregularity of ovulatory cycle.

b) Post Partum Sterility:

After the birth of the child a woman is generally sterile for some period. This is a period of temporary sterility and known as post partum sterility. Breast feeding, abstinence from sexual relationship etc. are responsible for post partum sterility.

c)Primary and Secondary sterility:

A certain percentage of women or couples is unable to participate in reproduction either throughout their life or after having one or more children. The average number of children ever born per women depends upon the percentage of women/couples those who suffer from the primary sterility. Secondary sterility is the inability of women to conceive a child after birth of one or more children.

d) Reproductive Wastage:

Reproductive wastage is fetal wastage. This may be due to natural abortion. Reproductive wastage varies from country to country.

2. Socio-Cultural factors:

In the process of child bearing and birth three stages are identified . They are:

a) Inter course   b)Conception c)Gestation

The union of sperm and ovum results conception . Then the termination of successful gestation of the fetus takes place. These processes are biological. But the different stages are influenced by socio-cultural factors. These factors can be categorized into inter course, conception, gestation variables.

a) Inter course Variables:

1. The age of entry into sexual intercourse.

2. Permanent celibacy

3. Part of the reproductive period spend after/between union . When unions are broken by divorce, separation or desertion and death affects fertility.

4. Voluntary abstinence.

5. Involuntary abstinence because of separation, illness etc.

6. Coital frequency

b) Conception Variables:

1. Fecundity or infecundity as affected by involuntary causes.

2. Use or non use of contraceptions by mechanical/chemical /or by any other means.

3. Fecundity/infecundity as affected by voluntary causes such as sterilization or medical treatment.

c) Gestation Variables:

1. Foetal mortality from involuntary causes

2. Foetal mortality from voluntary causes

Each of these variables have either positive/negative effect on fertility.

Other Socio-cultural factors:

a) Child Marriage:

Generally low age at marriage increases fertility.

b) Marriage, sex attitudes and practices:

The positive attitude towards marriage and family life play an important role for high fertility rate. Marriage promotes socially accepted pregnancy and birth in a higher degree. The attitude towards sex is another factor. Where sex is considered as the means for procreation the fertility rate will be maximum

c) Rituals and Customs:

Religious rituals affect fertility. The ritual that restrict sexual relationships in certain condition influence pregnancy and birth.

d) Family Structures:

The type of family promotes or depromotes rate of fertility. Joint family favorably promotes high fertility than nuckar family. The security and the care assured by joint family increase fertility.

e) Economic Conditions:

The economic status of family is closely associated with fertility. The lowest economic conditions produce high fertility. It has seen that lower classes have high fertility rate than upper class.

f) Education:

Higher educational level reduce family size. Interest in education and career delay the marriage.

g) Religion and Caste:

Belief system influence fertility. Contraceptive methods are considered as a sin by some religions. Their faith restricts the usage of birth control methods .Lower castes have higher fertility than higher castes groups. Societies with ethnic heterogeneity have high fertility.

h) Political factors:

The population policy and the programmers existing in a country influence the rate of birth. Governments propose pronatialist or anti natiolists policies. Pro nationalist policy refer to the measure that encourage fertility. Anti natolist policies are of controlling the population and supporting family planning programmes and abortion.

i). Mortality

High infant mortality is one of the reasons for high birth rates. Since probability of infant survival was low, parents will be more active in reproduction.

j). Preference for sons:

Male members are considered more functional in many countries. Continuous efforts were made for birth of a son or sons

k). Urbanization:

Fertility is high in rural areas than in urban society. High cost of living, the long process of child education, accommodation problems etc. are responsible for low fertility in urban area.

l). Occupation:

Type of education and occupation of husband and wife and the income influence fertility. Employed women have small families. Wive's in white collar jobs have lower fertility.

m).Infanticide:

Some societies accept infanticide for social security .Females are killed where girls are considered to be liability

n). Abortion:

Abortion has been legalised in many countries. India has liberalised abortion and legalised medical termination of

These factors are closely related. Age at marriage is linked with education and occupation. Economic conditions are related with political factors. So the socio-cultural factors create the structure of society, socialization process and development of personality. These processes are influencing attitudes and practices associated with fertility . Motivational factors like importance in community life and kinship relationship promote fertility. The values and life styles of society are associated with several socio-cultural factors.

Trends of Fertility Behavior:

Major trends in fertility behavior are:

1. Less developed countries have higher fertility rate.

2. Fertility rate is lower in urban area than rural areas.

3. Fertility of educated person is less than fertility of uneducated person.

4. Women with higher education have lower fertility rate.

5. Fertility rates are higher among manual and unskilled workers.

6. Higher income group has low fertility than lower income group.

Measurement of fertility:

The important source of information about fertility and mortality are:

1. Vital Registration
2. National Periodic Census
3. Sample Surveys

On the basis of data obtained fertility measurement can be made by using different methods mentioned below.

1.Crude Birth Rate(CBR)

$$CBR = \frac{B \ \times K}{P}$$

B = No. of total registered live births
P= Mid year population
K= 1000

2. General Fertility Rate(GFR)

$$GFR = \frac{B \ \times 10K}{FP}$$

B = Number of registered live births during the year

FP = Mid year population of females

K = 1000

3. Age Specific Fertility Rate :(ASFR)

$$ASFR = \frac{B_1}{P_1} \times K$$

B_1 = Number of live births to mother of a specific age group during a year

P_1 = The mid year female population in the same age group

K = 1000

II   MORTALITY

Mortality also plays an important role in population dynamics. The factor of mortality has played a dominant role for the decrease in population rate. The developed countries have remarkably effected by the fallen death rate. The study of mortality is useful for analysing current demographic conditions. It helps to determine the possible changes in mortality conditions of the future. The public health administration depend on the study of mortality. The implementation and evaluation of public health programmers are made by accessing the mortality rate. The statistics on death is also used for preparing the policies of insurance companies. Thus the study of mortality deal with the affects of death on population.

The UN and WHO have defined death as a "permanent disappearance of all evidence of life at any time after birth has taken place". The death can occur only after a live birth. The span between birth and death is life . Live birth is the complete expulsion from its mother, of a product of conception with evidences of life such as breathing, blood circulation and movement of muscles. So any death after live birth is considered as mortality . Abortion and still birth are not referred as death. They are fetal death. Any expulsion of fetus before it became capable of independent existence outside its mother is known as abortion. It can be induced or spontaneous(natural). When a birth does not have any of the characteristics of life, it is known as still birth.

From the very primitive society itself human beings have been interested in trying to control diseases and to prevent death. The interests and attempts in health science increased during 18th and 19th centuries The association below death and growth of population was assessed in 17th century.

And the measures for preventing the death have been taken seriously.

Sources of data on Mortality:

The major sources of mortality are

1. Vital Registration
2. Census Report
3. Sample Surveys

The Demographic Year Book of UN provides statistics on the number of death, death by age and sex, causes of death etc. Special issue of demographic year book may give data on death in great details. Statistical report of WHO also provides information on mortality.

Causes of Death: Factors of Mortality:

An important aspect of the study of mortality cover the causes of death. The information provided by medical science constitute the basis for the study of causes of death. But reliable data on causes of death are not available in many countries. Very few deaths are registered and causes of motality or deaths are not recorded. Death often results not because of single cause. This also make difficulty in the analysis of mortality on the basis of causes of death. And despite of all these difficulties the causes of death are identified for the study of mortality.

WHO prepared a manual on the International Statistics, classification of diseases, injuries and causes of death. According to the manual from this list of 50 group of causes of death 5 major groups are identified thousand groups of diseases have been identified. Out of these diseases 50 groups of cause of death noted.

1. Infectious and parasitic diseases and diseases of respiratory system

2. Cancer

3. Diseases of circulatory system

4. Death by violence

5. All other causes

It is possible to study the changes in the causes of death. If the causes of death are enumerated , they can also used in the study of changes in the mortality rate. It was pointed out that up to 19th century the death rates were high throughout the world . The main reasons for high mortality rates were;

1. Famines and Food shortage:
   In pre-industrial society human beings have limited control over the environment. Food supply was seriously affected by the geographical conditions. Agricultural production were limited by flood, draught and plant diseases . Severe malnutrition is resulted from the famines and food storage.

2. Epidemics:
   Small poxes, Malaria, T.B, Plague etc are quite common until recent times. It take a heavy toll of life. These diseases are spreading rapidly because of lack of drinking water supply, and dense population . Poor sanitary conditions also spread epidemics easily.

3. War:
   War has been an important factor affecting population size. It affect in two ways. It caused for death of soldiers and civilians.

4. Poor Sanitary conditions:
   Sanitary conditions were poor and worst in the past. There was a very little knowledge about the importance of cleanliness and hygienic conditions . So in the preindustrial society generally the standard of living was low and poor sanitary conditions caused for spreading of diseases and epidemics.

These factors contributed high level of mortality in the past. Man has succeeded to a great extent over these factors . As a result the mortality has notably declined through out the world.

Environmental Factors:

1. Community and Residence:
   Residential condition are influencing death rate. Contagious diseases are frequent in the slums. Overcrowding and poor sanitary conditions are the reasons for most of the diseases. In rural area comparatively the death rate are low. Fresh air, space and availability of food are related with mortality.

2. Occupation:
   The type of work is associated with the probability of death. Occupation determines the income and surroundings of the works and family. White collar workers have lower death rates. Mine workers have high death rates. As the economic status declined and the labour became heavier the death rate raises.

3. Marital status:
   It has been observed that married people live long than unmarried . Among the diseased married are minimum. High death rates among widows and divorced persons have been noted.

Levels and Treads in Mortality:

Economic progress results from the agricultural and industrial development. The level of mortality rate differs from country to country. It is higher in under developed countries. Some factors responsible for decline in mortality rate in developed countries are:

1 Increase in production and supply of food.

2   Advancement in technology

3   Improvement in standard of living

4   Improvement in sanitary conditions and public health measures

5   Various measures of environmental control like water supply, immunization, public health etc.

6   Health education programme

7   Curative medicines developed out of technological development and advancement in surgery

8   Various social reform movements of (19th and 20th centuries)

Death affects social system. It positively or negatively influence the living individual. Usually mortality affects family structure. The place of dead one cannot be easily substituted. The result is widowhood, widowerhood and orphan hood. The death of the older ones may not make sudden impacts on family. But the premature death affect severly. Some times it makes isolation. Some times people feel lonelier after death of nearest or earest. Mortality influences inter personal relationships. The group relationship may be affected because of death of some persons. The group relationship may be weakened by the death of a single person. Even infants death seriously affects mother or father. Some times death of a person influences the fate of a country or an organization also Religions explain affects of death. It tell us the life after death. The influences of the dead also noted. There are rituals and customs to please the souls of dead ones.

Mortality Differentials

Mortality differentials have seen on the basis of age, sex, community conditions etc

1. Age

   Age is one of the important variables in the analysis of mortality. Death rates vary with the age. It may be observed that age specific death rates are higher at the age of zero than above twelve months. It is relevant in developed as well as developing countries. The death rates suddenly decreases for the age group of 1-4, then gradually decreases upto the age group of 10-14. The lower values of the age specific death rates are observed for age group 10-14. After age of 14 the values of age specific death rate gradually increases upto 50-55. Then rapidly death rate increases.

2. Sex:

   Mortality conditions differ from males to females. Females have an over all advantage over males with respect to mortality . In most countries the average expectation of life is higher for females than males. The gap between average expectation of life for females and males is wider in developed countries than in developing countries.

3. Community and Country:

Data on mortality were not available for many countries in the past . After 1980 WHO has made remarkable attempt to collect data on mortality for these countries. Now it is possible to estimate approximate levels of mortality for different countries of the world. It is on the basis of data collected in sample surveys. While in 1950-56 the crude death rate for the world was 18.8% as per1000 population. In 1970-75 it has decreased to 12.8, in 195-90 to 9.8. The average expectation of life at birth increased from 46.7   years (1950-56) to 63.9(1985-90). During the 15 years period the crude death rate is declining in less developed countries also . More developed region experience a decline in crude death rate and increase in the average expectation of life at birth.

Striking mortality differences between developed and developing countries are also noted. The crude death rate for more developed countries were 10.1 and it is 23.3 for less developed countries per thousand population in 1950-56

In 1970-75 it was 9.2 for developed countries and 40.3 for under developed countries. African continent has the worst mortality rate in the world. South Asia, Middle South Asia and Western South Asia are also having bad mortality conditions. Africa had the highest crude death rate, 16.6/per 1000 population in 1980-85.

The variations in mortality rate have been identified on the basis of rural urban background, occupational conditions, and marital status.

Level & Trends in Mortality in India:

The history of population growth in India before 1920 is the history of great war against death. Upto 1920 population growth in India was very oftern marked by the high death rates taken by epidemics and famines. Millions of lives were lost during massive calamities . It is unfortunate that the actual death rates during these period are not available. But the mortality rates were high fluctuating due to calamities and epidemics. However demographics have estimated the mortality rates on the basis of available informations.

The two striking features about Indian mortality are

1. The higher level of mortality rate before1921
2. The decline in mortality rate after 1921

    The average expectation of life at birth for an Indian was very low in 1901-1920. In 1920 it was 19.4 for males and 20.9 for females. This may be considered as the lowest any where in the world. But mortality conditions in India have remarkably arrested over the last seven decades. The averge life expectancy has increased in each successive decades. The main reason for the

low expectancy in India has been high infant mortality. During 1901-1911 the infant mortality rates for males were 219 per 1000 and for females 284 per 1000. One fourth of the babies died before the completion of the first year of the life . Once the last decades infant mortality rates in India have also declined.In 1982 this rate was 104.8 per 1000 live births.

The fight against death in India was undertaken in three important fields:

1. The control over famines & food shortage
2. Control over epidemics and diseases
3. Control over war and dacoitery

The achievements in these three fields were slow. But still mortality rate remains very high as compared to other countries . Crude Death Rate for 1000 population for Asian countries in 1985 proves this

The average expectation of life at birth in India is very low as compared to other developing countries. In Sri Lanka it is 67 but it is 56 in India in 1985.

The mortality in urban India is lower than rural India. This is true to all states in the country. The major reasons are lack of sanitary conditions, lack of medical care, unavailability of drinking water etc. For infant mortality rate also rural India record high rate.

The crude death rates in various parts of India differ notably. In1988 the highest crude death rate was observed in UP. Among the Union Territories, Chandigarh has the lowest crude death rate, 4.7per1000. There are some regional variation in infant mortality rates. Rural Kerala has the lowest infant mortality rate, 2.5 per 1000. In rural UP infant mortality rate is 126 per 1000 in 1989.

It may be concluded that India has made considerable progress in the process of decline of mortality . The fight against death is considered most effective and successful, Plague, small pox and malaria have been almost controlled. Famine, is no longer a thret to human life in many regions. Despite of all these developments the younger generation and women of Indian population are still severely affected by mal nutrition and under nutrition. Infant mortality rates are still very high. The average life span is low when compared to that of developed countries. So India has to go long way in death control programmes.

Infant Mortality:

Mortality during the first year of life is high for all countries. It varies from country to country religion to religion. In countries like Pakistan, India, Bangladesh, Africa and South America, infant mortality rate is very high. Countries like Japan

and Sweden stand with very law infant mortality rate. It is interesting to note that infant mortality rates in some east European countries. Are comparatively higher than west European Countries. Sample surveys proved that the infant mortality rate is about 200/1000 in Africa.

The reasons for the infant death at the earlier and later stages differ. Various factors are affecting infant mortality. These factors are classified into biological, and environmental. The level of mortality is very high in the first few hours, days and weeks of the life Reasons for this condition differ. The study of infant mortality is grouped into two categories. The first category consists of those infant who died before completion of four weeks of life. This is known as Neo-Natal Mortality. The other category consists of infant who die between 28 days and one year. This is known as post Neo-Natal Mortality.

Factors which effect factual and neo-natal death primarily indigenous, those which effect post neo- natal mortality rate are primarily exogenous Indigenous factors are primarily biological.

They are related to the formation or expulsion of factors. The important biological factors are;

1. Age of the mother
2. The birth order
3. The period of spacing between birth
4. Premature birth
5. Weight at birth
6. Multiple birth

It has been observed that foetal and neo-nate mortality rates are higher at the younger ages of the mother. The maturity of an infant at birth is also related with neo-natal mortality. The weight of the lady at birth is an important factor that is influencing death. Still birth rate and neo-natal mortality rate are very high in the case of multiple birth.

Exogenency factors are external factors likes epidemics, disease, occupation of parents etc. The environmental factors include:

1. Over crowding
2. Low sanitary surrounding
3. Lack of fresh air
4. Lack of Proper Sun
5. Illegitimacy

The trends in infant mortality differ from country to country. The highest infant mortality is observed in Africa 300 per1000. It is 126 per 1000 in Pakistan, 115 per 1000 in Egypt;

105/1000 in India. Sweden and Japan have the lowest infant mortality rate. Notable changes in the decline of infant mortality rate are noted in developed countries. It was pointed out that a drastic decline in infant mortality would be difficult without some renolulioary achievement in medical science.

III. MIGRATION

Migration is one of the important factor of population change. Migration affects population size, socially,culturally economically and politically. Migration may increase or decrease the size and structure of population. It always plays an important role in the distribution of population. So the study of migration is important to demographer, sociologists, economist, planners and administrators. Because of various reasons study of migration is important. It is a symptom of basic social change. Migration was the lebase for industrialization. For the emergence of cities and metropolis migration played a vital role. Migration has an economic interest. It do affect production, supply and distribution of products. Migration makes a change in the economic status of people. Due to the socio-economic impact made by the migration, planners and administrators try to study the process of migration. It helps to prepare a policy and a plan for socio-economic development. The socio-psychological problems created by migration will be existing in sending and receiving places. To solve these problems the causes and consequences of migration are studied in detail.

For the earlier migration, there is no records. People were nomads and moving around. After practice of agriculture human beings started to settle. People moved in groups to the fertile lands and settled on the banks of rivers. This is considered to be the first migratory movements. But there is not much historical evidences regarding this migration. The impacts of migration in the traditional societies cannot be evaluated due to the lack of information. The nature of the physical environment was the major cause. The availability of water and fertility of land were most prominent elements influenced in the process of migration. The techniques and tools developed by the communities were also motivating forces for migration. The social organizations of the group also attracted other communities . So the factors influenced for migration are categorized under four groups:

1. Climate
2. Fertility
3. Flora and Fauna
   Fauna
4. Cultural factors

Definition:

The UN Demographic Dictionary defined Migration as follows:

"Migration is a form of geographical mobility or spatial mobility between one geographical area to another, generally involving a change in residence from the place of origin or place of departure to the place of destination or the place of arrival". Such migration is called permanent migration. It can be distinguished from other forms of movement which do not involve a permanent change of residence.

The term immigration refers to movements into and emigration refers to the movement out of a population territory. Thus migrants leaving Kerala to USA to settle down are immigrants to USA and emigrants to Kerala. In-immigration refer to movement into a particular area.Out migration refers to movement and out of aparticular area. In migration and out migration refers to movements within a country. Both refer internal migration. Thus migrants who came from Kashmir to Delhi are considered to be immigrants for Delhi and out migrants for Kashmir. The term Migratory Movement is used for that section of population movement which is due to migration. The place from which a move is made, is the place of origin or departure. The place of arrival or destination refers to the place at which a move terminates. The total of the arrivals of immigrants and inmigrants and departures of emigrants and out migrants is known as gross Migration. This is also known as Volume of Migration. Net migration is the difference between the total number of persons who arrives and the total number of persons who leave. This is also referred as Balance of Migration. The phrase migration stream refers to the total number of moves made during a given migration interval. The persons involve in migration streams have a common area of origin and a common area of destination.

Types of Migration:

The mobility of people within a national boundary is very difficult to measure. People move from one place to another. These movements are diverse in nature. The distances covered vary from few kilometers to several kilometer and large number of movements are casual. The duration of stay involved may also vary from few hours to several years. Some movements do not involve a permanent change of residence. They are not considered as migrants. The restriction on the concept of migration also eliminates other types of movements such as nomads. They have no fixed places of residence. Internal and International migration are noted. Internal migration is migration of persons within a country. International migration is movement of population from one country to another.

Census report, Vital Registration and Sample Surveys are three sources of information on internal migration. In census enumeration the question on the places of birth is widely asked. In 1971 the question concerned the place of the last usual residence was asked. From1981 onwards the information was obtained about the reasons of migration.

Sample surveys help to study the internal migration. The study of differential migration is helping to study the factors of migration.

Internal Migration:

Migration is affected by economic, political, social and educational factors. Those who have studied internal migration adapted two distinct approaches. The first is associated with push and pull factors. It attempts to study the conditions in the place of origin and the situations outside . The second approach attempts to formulates empirical generalisation. It prepares Mathematical models of migration.

Push and pull factors are related with the circumstances prevailing at the place of origin and place of destination.

The major push factors are:

1. High density of population that creates pressure on existing resources
2. Exhaustion of natural resources
3. Calamities like flood, draught, famines etc.
4. Socio-religious political conflicts.

The special condition of place of destination are pull factors

1. The establishment of new industries or trading centers with the provision of employment opportunities.
2. Following commercial and economic opportunities
3. Facilitates for high education and training
4. Favorable climate conditions

National sample survey shows that 75.4% of migrated mass in India had migrated to gain better employment 12.6% had done so for educational purposes. It is obvious that push-pull approach has been useful in history of migration. This approach does not had to any theory of migration studies proved that migration occur not because of either push or pull factors alone. But combined of both.

Everest Lee analysed the factors associated with the decision of migration. Four categories are identified;

1. The factors associated with the area origin:
2. The factors associated with the area of destination
3. Intervening obstructs
4. Personal factors

Lee has attempted to formulate several hypothesis regarding the types of migration. These hypothesis Cover:

1. Volume of migration
2. Development of streams and counter streams of migration

There are direct and indirect techniques to measure the internal migration. The direct techniques are based on the data obtained from census report. Questions on the following items provide informations for direct estimate of migration movement:

1. The place of birth of the person
2. The last or previous place of residence
3. The duration of stay of a person at that present place of residence
4. Place of residence at a fixed prior date.

The indirect techniques of migration do not require special questions. The exend of migration can be estimated from census report.

International migration:

International migration is defined as geographical mobility of people from one country to another. The concept of country is defined in term s of political as well as cultural factors. International migration is as old as the history of human society. But the first international migration were natural rather than political. It is estimated that the first international migration has begun from Africa towards East African countries; but we have no clear statistics about this migrations. The major migratory scheme was geographical mobility from Europe to America. Millions of European migrants crossed the Atlantic Ocean in search of fortune and to settle down in north and south America. They were from Britain, Spain, Portugal, Italy and France. Another significant stream of European migrantes settled in Latin American countries. Europeans also migrated to Australia Newzealand etc. British migrantes moved towards south Africa in 18th and 19th. Centuries Chinese moved towards Taiwan, Philippines and Japan. Indians moved towards Burma, Ceylon and Malaysia. Countries like Fiji, Trinidad, Mauritius Mali etc. were also attracted in that period. Most of the Indian migrants were traders or laboures. The most important transfer of civilians occur in India in 1947 from Pakistan. It is estimated that 7.2 million migrants came to India from Pakistan. Almost the same member migrated from India to Pakistan. The most dramatic event in the history of international migration is founding of Israel. Israel is the only country that collected and assimilated the immigrants within a few years. Form May 1948 up to December 1951 Israel added about 7 lakhs of immigrants. No other country in the world has ever recorded such a rapid immigration rate without any compulsion.

International migration is also influenced by push and pull factors. It also affects the place of origin positively or negatively. It helps the place of destination positively in developmental affairs.

Causes Migration:

General as well as personal causes are pointed out for migration. The most significant reason for geographical mobility is associated with economic development, political ,social and demographic pressures are also associated. There are important factors of obstacles in the international migration. The main principles that have been found in the international migration are: 1. When the population growth in a region exceeds the economic growth

2.When a region of low population attracts other regions.

3.For seeking suitable employment and business opportunities

4.The unskilled labourers are attracted.

The intensity of migration varies universally. The international migration may be selective as it regards sex, age, occupation and skills skilled of unskilled labourers is unfavourable to local unskilled labourers, but beneficial for skilled labourer. The possible personal reasons for internal and international migrations are:

1.To help others

2.To be with relatives

3.To find a climate more suitable for health

4.To find neighbors with same status

5.For voluntary service like military or social work.

The other causes for migration are :

1. Education
2. Marriage
3. Business
4. Employment
5. Purchasing of property
6. Luxurious and glamourous life
7. Calamities and famine
8. Ex communication
9. Group conflicts like war
10. Fertility of land
11. Religious reasons
12. Death of some persons

Thus internal and international migration takes place due to various reasons. The internal migration cannot be measured easily. International migration can be measured from various sources. The important sources for collecting information about international migration are:

1   Port and Airport statistics
2   Land frontier statistics
3   Passport statistics
4   Population register statistics
5   Transport contract statistics

Migrational Differentials

The stream and volume of migration differ interns of various factors . The difference in the migratory movements are defined as differential migrations. Differential migration is analysed by the following factors.

1. The Differencial Voume of migration will be higher from the youth group. The physical capacity and the desires or dreams pull the youth from several countries. Among the children and the aged the migration rate will be minimum.

2. Differential Migration by sex:
   Among the migrants males constitute the largest volume. Only very vew females are able to migrate. The occupational environment is not much favourable for females in the process of migration.

3. Differntial Migration by education:
   The educated and those who find out a better job in their place of origin will be more in migration .And for better education people migrate.

4. Differential Migration by marital status:
   Marriage is another relevant factor that influences migration. Un married migrats more than the married . Even among married the first period of marriage will be promoting migration than after several years of marriage. The married with children move lesser to another country than childless couples.

IV. MARRIAGE

Marriage is another factor influencing population growth . Marriage, separation, divorce and widowhood are affecting the population They are also related to the process of migration . Marriage has profound influence on fertility. It is the first step of reproductive process. Though marriage is not a necessary biological condition, for the birth of a child, marriage is widely practiced. Many countries of the world do not allow to have a child before marriage. Marriage means the legal union of persons of opposite sex. Constituted by an act or ceremony or process. The legality of this union may be established by civil, religious or other means recognised by the society . Marriage provides the biological

continuity of the society through procreation. Marriage provides cultural continuity through the suitable atmosphere for socialization. The age of marriage for females makes the beginning of reproductive life. It is through the variables of marriage that replacement takes place in a meaningful way.

Generally marriage is that stage in the life of man or a woman when they are socially permitted to live together. So the leagal recognition of physical relationship between two sexes is known as Marriage .Several established customs are determining the factors like age at marriage, , number of marriage, size of family etc. It is a social as well as biological necessity for human beings. A change of marital status may also have an influence on mortality and migration. The number of marriages are materially affected by changes in the number of men and women in the country . Marriages tend to become a curse in bad times.Economic degression reduces the number of marriages. Many couples have to postpond their weddings due to unfavourable circumstances. They also exhibit some seasonal variation. preference is given for holiday period or time after harvest. This variation differ from region to region .Data on marriage is collected from marriage registration. Marriage is studied under crude marriage rate and specific marriage rate.

Factors affecting marriage rate:

The marriage rate of any population is affected by the following factors:

1. Fertility:

   Fertility rate of population is positively correlated with the proportion of married to unmarried. It increase or decrease the number of children born for married couple.

2. Sex differentials:

   The marriage rate of a country also depends on the number of unmarried men and women. It is rarely found that the number of adult women and men are equal. If by chance the number of unmarried women exceeds number of unmarried men the marriage rate for women will be lower than men.

3. Proportion of married:
   There is greater fluctuation in marriage rates than the proportions. Generally proportional marriage has a tendency to become constant in between 45-60 years. The proportions married is only affected by death at higher ages.

4. Marriage dissolutions:
   Dissolution of marriage is breaking up of marital relationship. It is found in the form of divorce and death of partner. Separation and desertion also function as temporary marital dissolution. These events bear a positive co-relationship between age and marriage widow is very common in several countries due to the wide range ege

diffence between the partners. In those countries generally wife is lesser in age than the husband.

5. Mean age at marriage:

Mean age at marriage is the estimated average years of unmarried life of a woman. In other words it is estimated average year of life of woman related to a life table before the first marriage.

Age at Marriage:

The child marriage as a practice started during the middle ages. But for long time many countries were known for child marriage. In India child marriage was an integral part of social system. Age at marriage was low and still it is lower than many countries. Marriage is considered as social compulsion in India. Social customs rooted in patriarchy supports and strongly enforce the norm of child marriage. In almost all religious groups, in all states in India child marriage was practiced. The age at marriage of girls was below 13, in almost all parts of India except some tribal groups. Social reformes started movements against child marriage in the beginning of 20th century. Government has been forced by reformers to change the situation by presenting some legal sanctions. The situation was severely changed by the Sharada Act of 1930. It fixed in that time minimum age of marriage for boys as 18 and girls as 14. The act was further amended in 1949 by raising the age of females to 15. The Hindu Marriage Act of 1955 made severe changes in the age at marriage. According to 1971 census about 50% do not marry at the age of 10. But these figures were calculated by considering all the persons below the age of10 as unmarried.

V. DIVORCE:

Divorce is a form of marriage dissolution. It is commonly found as a process after separation and sometimes after desertion. Divorce occur only after marriage. Divorce weaks breaks the familial relationship. The causes of divorce may be social or personal. And the consequences of divorce are also affect personal and social life. But divorce affects the growth of population. Divorce events bear a positive co-relationship with age. More divorce are occurring in the later period of marital life in India. But the western experiences are different. In those societies divorce rate is higher immediately after the marriage and within five years after marriage .Divorce bear a direct impact on the demographic process in the form of production in reproductive period. This influence the total fertility rate.

Separation is a state in the marriage life of a couple when they do not live together due to some reasons. Separation is found in two forms:

1. Separation because of personal reason
2. Separation before divorce.

Before divorce informal arbitration may be made. If it fails the legal separation occur. Separation may be due to physical inability, imprisonment, military service etc. Legal separation is break up of marriage contract. The impotency of male member, infecundity, diseases etc are some significant reasons for divorce.

Divorce is a developed form of separation. After divorce remarriage is possible . In separation there is a possibility of living together by partners. But usually in divorce this chance is minimum. Divorce is quite different annulment. Marriage annulement may be enforced in the case of violation of any law. A divorce can be obtained on account of any event in married life. The different ways used to determine the frequency of divorce are:

1. Annual divorce per 1000 mid year population
2. Divorce in a specific year per 100 annual marriage
3. Annual divorce per 100 couples or per 1000 married persons in a mid year
4. Annual   divorce difference on the basis of age of wife and husbands in relation to their marriage periods

Divorce rates are the absolute number of divorces granted each per year for 1000 persons present in the population at the mid year. Crude Rate of Divorce is indicator of the gross addition to the marriage population and from the marriage segment. Thus the estimation of divorce helps to analyse the changes occurring in the population. In India the study of divorce cannot be made easily as we are not getting it correct records in Divorce. Many divorces are informed only to religious organizations but not to governmental institutions

VI. WIDOWHOOD:

Widowhood is a state obtained when anyone either husband or wife is died. If husband die wife is called widows and if wife is dead husband is called widower. But any of them remarriage he/she is counted as married. The proportion of widow than the widows is always high in all societies at any time. The reason is that age of wife's is always lesser than husband's and another major reason is the possibility of remarriage is high for males. The mean age specified rate of married males is generally taken as rate of widowhood, for any age of wife.

The widowhood age was slow in 1911-30 because of world war, epidemics and famines. It was higher in independent India, because of decrease in mortality and medical care. Higher age of widowhood is seen in UP, Punjab and Rajasthan. It is because of the remaining age found among Jaits, Gujars and Aheers. The average widowhood lies in between 36-37 years in Maharashstra, M.P, U.P,Punjab,. A.P and Jammu Kashmir. It is between 34-36 years of age in Kerala, Karanataka, Tamilnadu, Orissa, West Bengal and

Bihar. Now we find that 30-50 widows per 1000 married women. The incidence of widowhood in India in the early age group is high. It is low in the age group of 10-14 years.

It is found that the mean age of widowhood is maximum in Christian and minimum in Jains. The order follow like this, Christians, Muslims, Hindu, Sikhs and Jains.

There is a complete silence about widow remarriage in Indian census. So it is very difficult to have a quantitative analysis of widowhood in India. Some studies show that only 25.5% of widows are remarried in rural areas. It has been proved that widow marriage decreases when age of women increases. The widows of age 14 years generally occupies a great percent in remarriage especially those who have not gone to bridegrooms house.

Widow remarriage depends upon the number as children of the widow. Widow remarriage is also depending upon the duration of widowhood. It has been found that childless widows are probably marrying within one year of widowhood. Some communities promote remarriage. It should be performed before the first anniversary of death of husband in some communities. Marriage of widows of one or two children takes place within four years. There are great restriction for remarriage among higher caste group than the lower caste group.

Widows remarriage was a takes in India for a longer period especially in Middle ages. This situation still prevails in some communities. Our social reformers have considerably succeeded in changing the social views about remarriage . At present widow remarriage is even legally encouraged. In urban areas widow remarriage is being increasingly supported among the educated classes. These are the major factors that influence population dynamics.

MODULE 4

POPULATION GROWTH, DEVELOPMENT, POLICIES AND PROGRAMMES

The concept of progress and development are widely used to mention the process of change. Progress is very much related to the idea of development. The idea of progress has been controversial. The concept of development in the sense of the process of national growth, is of fairly recent origin. The idea of development has been widely accepted. Development is both an economic and social process. The process of social and economic development involves a variety of interrelated factor. These factors may operate in single or in combination. The process of development would bring about several changes through interrelated factors. They may be material like a rise in the income level or greater availability of food. Changes may also occur in ways of thinking, in attitude towards women's education opinion against caste system. Changes may take place in the social system such as changes in the systems of communication due to technological innovations. So development is a very complicated process. And there is no single input, output law governing total development.

Contents of Development:

There are three ingredients of the process of development they are;

1. Goals or values

2. Instruments or Means

3. Structures

1. Goals/ Values:

Many countries have have certain development objectives. They are:

1. Increase national percapita income

2. Achieving better status of health

3. Increasing educational opportunities

These are the main objectives. When development is not planned the goals are not declared. The goals of development plans may not reflect the pattern of popular preferences. The process of establishing development goals is itself a process of development.

2. Instruments:

Development process involves the building up of instruments or infra structure, like capital, equipments, schools, hospitals etc. There is a relationship between

goal and means of development. Factors which are goals in themselves also become a mean to reach at.

3. Structures:

As development takes place some change may occur. The final goals may be achieved. Industry may be bloomed up and new structures may be developed. When industrialization takes place there will be reduction in the involvement of agriculture.

Development may accompany other changers. Some undesirable changes may be accompanied. Eg: pollution in industrial area, crime and disorganization in urban areas. Such changes are not to be considered as part of development.

Measurement of Development:

Development projects or programmes are to be evacuated. It is to be done on the basis of certain measures. For international comparisons of levels of development, it is necessary to have some measures of development.

1. Per Capital National Income (PCNI):

The most common means of measuring development is the Per Capita. National Income. Some have opinion that an increase in real national income is the most convenient single measure of economic development. If a country's real national income increases by 2% per year and it just population increases at the same rate there would hardly be any economic development. The per capita real income is more, meaningful measure of development than the real national income. The per capital income have some limitations. It does not measure the distribution of income in the population. The gross income disparity is not reflected in per capita income. Therefore per capita income found to be inadequate for measuring social and economic change. It is to be supplemented by other indicators to measure the development.

2. Multiple Indicators of Development:

United Nations Research Institute for Social Development (UNRISD) has prepared a list of indicator for a more quantitative analysis of development. It consists of sets of both economic and social indicators. So

Social and Demographic Indicators:-

a) Health and Demographic:

1. Infant Mortality Rate

2. Expectation of life at birth

3.Inhabitants per physician

4. Inhabitants per hospital bed

b) Nutrition:

5. Calorie consumption per capita per day

6. Protein consumption per capita per day

7. Consumption of animal protein per capita per day

c) Education:

8. Literate as percent of total population

9. Combined and secondary enrollment as a percentage of age group 15-19.

d) Housing:

10. Average number of persons per room

11. Dwelling with electricity

e) Communication:

12. Newspaper circulation per 1000 population

13. Telephones per 1000 population

2.Economic Factors Transport and Services:

14. Railways; net ton kilometers per capita

15. Passenger railway kilometer per capita

16. Motor vehicles per 1000 population

g) Agriculture:

17. Agricultural production for male worker

h) Industry:

18. Electricity consumption kilowatt per capita

19. Energy consumption

i) Trade:

20. Foreign trade per capita

j) General:

21. Gross Net Product Per Capita (GNP)

Population and Development:

The relationship between population and development can be looked at from three different angles.

1) Development depends on Population:

Population is the independent variable and the development is the dependent one.

2) Population depends on Development:

Development is the independent variable and population is the dependent one.

3) Population and Development affect each other:

They have a reciprocal cause and effect relationship. Population should be modified to suit the prevailing economic situation. Development can meet the requirements of population. If the development is not fast enough to meet the needs of population, poverty and over population will be the result. So fertility control is a must for advance in economic conditions.

Economic development may control population growth. Any independent policy of Population control in a developing country is unnecessary. Economic development eventually bring about quality control over the population.

Both population and development have an impact on each other. Economic development affects population growth. Population growth has an impact on economic development. There is a reciprocal relationship. This is more realistic idea. The World Population Plan of Action (WPPA) has supported idea of population planning and development planning. This relationship between development and population is not of a final quantitative nature. They both affect each other in varying degrees from country to country. It depends upon cultural, religious and other factors.

The demographic transition theory explains the relationship between population and economic development. Demographic transition describes the passage through which countries move from high birth and high death rates to low ones. This has been the experience of countries going through a process of modernizing economic and social development. The demographic transition is a historical process.

The inter relationship between population and economic development may be divided into three stages.

The first stage is characterized by almost a stationery population with high birth rate and death rate. The economy of the society is pre- industrial and agrarian with a traditional organization. High death rates in such a society are due to chronic malnutrition, famines and epidemics. High birth rates are supported by the socio-cultural system such as illiteracy, early marriage, traditional values, religious belief, demand for family labour etc. In the first stage of demographic transition the country is economically backward. In the second stage

of demographic transition death rates begin to decline. Birth rates continue to remain high. It is because of better nutritional and living conditions. There is an increase in the net growth rate of population. During the third stage, when the country's economy is properly developed birth rates decline faster. Low death rates decline slowly. The birth rates remain slightly higher than the death rates. The low to birth death rates are stabilised. Thus with the continuing process of economic development growth rates of population slows down.

Consequences of Rapid Growth of Population:

In the history of mankind, long term economic growth is comparatively a recent phenomenon. The improvement in the economic conditions of nations has been associated with the industrial revolution. It radically transformed their economy. It brought about changes in the manufacturing processes. It also revolutionized other economic activities such as agriculture, transportation, commerce and banking. Social institutions and way of life were also influenced by the industrial revolution. These changes caused for several demographic trends.

Decrease in mortality rate following substantial improvements in life styles, living standards and environmental situations influenced the population growth in developed regionas People in developed countries responded to increase in population growth by resorting to abortions by limiting the family size, by marrying late and by migration. The relationship between population growth and socio-economic development is very complex. The experiences of different countries vary in this regard. Out of those experiences it is stated that the high rate of Population growth is not desirable for socio- economic development.

Population growth and socio- economic Development in India:

Indian population problem may be viewed from:

1. The absolute size of population

2. The rate of growth of population

3. Age stucture of population

The total count of population in India was 68.38 crores in 1981 is. It has reached more than 100 crore. The large sized population demands faster economic development. But because of the broad base even a low rate of growth would add a large population each year. The geometric rate of population growth in India in during 1971-81 was 2.24 percent per year. This growth rate appears to be low. But it has a tremendous effect on population increase. The enormous, size of population and rapid population growth are the two most important characteristics of Indian population. They have significant consequences for the country's social and economic prograss. The age structure of the population is also affecting the

process of development. When a country's birth rate is high, a large number of non productive persons are added to the population every year. If the population base is large the number of such low entrants is even bigger. The high birth rate and the large number of children in the population increase the pressure on different kinds of services, such as maternal and child health services, nutritional services, primary and secondary school services etc.

The consequences of rapid growth of population cause for different problems:

1. Development and absorption of human capital is the biggest problem. Illiterate people increases.

2. Problem of utilization of man power. Better educated man power aspires prestigious jobs. Old occupation becomes out of date. Unemployment and under employment increases.

3. A rapidly growing population overstrains the available infrastructure and opportunities like education, housing, transportation, health care etc.

4. A rapidly growing population puts pressure on land and other natural resources, such as forest and water. Over exploitation of these recourses results in deforestation and desertification.

5. The cost of production of basic necessities of life increases.

6. The rapid growth in population has adverse effects on the equitable distribution of income. The increase in GNP is greatly reduced. In India during the past 40 years GNP has increase at the rate of 3.6% per year, whereas per capita income has by only 1.6% per year 7. When population increase rapidly increased rapidly the major concern of a developing country tends to be focused more on economic, growth. The inequalities within the country tend to widen.

The consequences of rapid population growth in India can be analyzed by assessing the three areas of social life. They are

1) food and nutrition

2) Educational attainment

3) Health and medical services

1. Food and Nutrition and population growth:

The production of food is a high priority item in the economic planning. The increase in agricultural production rise the standard of living. Food situation in India is satisfactory. The green revolution has raised the hopes for the availability of food in substantial quantities. The affects of the green revolution are mainly visible in the

production of wheat. Protein deficiency is indirectly caused by a low calories intake. When not enough food is available for a major section of population, it would be under and. It may be observed that for India the per capita dietary energy supply false short of requirements by about 6%. Though there has been a raise in agricultural production the calorie and protein intake for an average Indian has declined from 1961 to 71. It was because of the excessive growth of population.

2. Educational Attainment:

Population growth and education are closely related. In any educational planning the demographic factor occupies an important position. If the number. of children increases more rapidly than the population, the need for educating them puts a heavy pressure on the nations resources. Those countries which have a large proportion of children in the school going age are precisely the countries which are educationally backward. It is in these countries that the age structure of population becomes a barrier to educational improvement.

It was found that the general literacy rate in India in 1981 was 36.17%. The problems posed by rural illiteracy and female illiteracy are even worse. The rapidly increasing population place heavy obstacles in the path of educational planning. Despite the substantial progress which has been achieved in the expansion of educational facilities, the targets laid down for elementary education have not been fulfilled.

3. Health and Medical Services:

Health is a state of complete physical, mental and social well being. It is not nearly absence of diseases. It is an important aspect of quality of life; that can be improved by the provision of efficient medical services. One of the indicators of the coverage of population by health and medical services is the ratio between those services and the population. The Health Survey and Planning Committee had recommended that there should be one doctor for a population of 3500 and one hospital bed for a population of 1000. In India it can be seen that only in very few states there is one doctor for 3500 or less population.

The hospital bed population ratio in India in 1984 was not very satisfactory. There was one hospital bed per 1330 population. Very few states have achieved this ideal. Kerala and Meghalaya leading the way with one hospital bed for a population of only 591. Bihar is the worst in the respect, with one hospital bed for a population of 3097.

A rapid population growth slows down the growth of per capita income. It also restricts the growth of the gross National Product (GNP), by holding down the rates of savings and capital formation .Food production has to be given priority, the allocation of resources to other aspects of socio economic development becomes limited. Rapid

population growth also tends to perpetuate the disparities in income distribution. With rapid population growth, the number of new entrants to the labour force increases each year. Country's economy finds it difficult to provide jobs for all entrants. The surplus labour force compelled to work in available suture. And the availability of cheap labour inhibits the development of technology.

Population Growth in India

The population of India as of 1 March 2011 was 1,210,193,422 persons. This implies an increase of 17.65 per cent in the ten-year period since the 2001 population census. The population increase in the country has continued to slow down and the rate of retardation in population growth appears to have increased. In terms of the average annual growth rate, the population of the country increased at a rate of 1.63 per cent per year, well below the average annual increase of 1.94 per cent per year during 1991-2001. After achieving the peak growth rate of 2.22 per cent per year during the period 1961- 71, population growth in the country has slowed down in every decade and appears to be picking up the momentum.

As the result of the slowdown in the population growth, the net addition to the population decreased in India for the first time during the period 2001-2011. This decrease in the net addition to the population is perhaps the most remarkable feature of population transition in India during the period 2001-2011. This is an indication that the population growth in the country has now started shrinking.

1. Birth and Death Rates:

Birth and death rates in India are high compared to most countries in the world. The percentage decadal growth during 2001-2011 has registered the sharpest decline since independence. For 2001-2011, the decadal growth has become 17.64 per cent—a decrease of 3.90 per cent from 21.54 per cent for the period 1991-2001.

2. Density of Population:

Density of population implies average number of people living per square kilometer. Density of population in a country is measured by dividing its total population by total area. The population density of India from 1901 to 2011 has been the density of population of India was as low as 142 persons per sq. km. and this steadily increased from 267 in 1931 to 382 in 2011.

3. Growth Pattern:

The total population of India in 1901 was about 238 million which rose to 361 million in 1951 and 843 million in 1991 in March 2001, India's population was 1,027 million, which became over 1210 million in March 2011. The annual growth rate since 1971 has been over 2 per cent, while the growth percentages in 1991 and 2001 over the base year of 1901 were

about 254 and 331 per cent respectively. Between 2001 and 2011, however, the growth rate declined to 1.76 per cent.

The percentage decadal growth rates of the six most populous states have declined during 2001-2011 compared to 1991-2001:

(i) Uttar Pradesh (25.85% to 20.09%)

(ii) Maharashtra (22.73% to 15.99%)

(iii) Bihar (28.62% to 25.07%)

(iv) West Bengal (17.77% to 13.93%)

(v) Andhra Pradesh (14.59% to 11.10%)

(vi) Madhya Pradesh (24.26% to 20.30%)

(vii) During 2001-2011, as many as 25 states/UTs with a share of about 85 per cent of the country's population registered an annual growth rate of less than 2 per cent as compared to 15 states/UTs with a share of about 42 per cent during the period 1991-2001.

(viii) 15 states/UTs have grown by less than 1.5 per cent per annum during 2001-2011, while the number of such states/UTs was only four during the previous decade.

(ix) Uttar Pradesh is the most populous state with almost 200 million people, which is more than the population of Brazil.

(x) The combined population of Uttar Pradesh and Maharashtra (the second most populous state), at 312 million, is substantially greater than the population of USA.

(xi) Three-fifths of India's population live in the following seven states: Uttar Pradesh: 199.6 million

(xii) Maharashtra: 112.4 million Bihar: 103.8 million West Bengal: 91.3 million Andhra Pradesh: 84.7 million Madhya Pradesh: 72.6 million Tamil Nadu: 72.1 million

(xiii) The least populous state is Sikkim.

(xiv) Among the union territories, NCT of Delhi is the most populous.

Population 0-6 Years:

(i) The total number of children in the age group 0-6 years is 158.8 million (-5 million since 2001).

(ii) Twenty states/UTs now have over one million children in the age group 0-6 years. On the other extreme, there are five states/UTs in the country which are yet to reach the 1, 00,000 marks.

(iii) Uttar Pradesh (29.7 million), Bihar (18.6 million), Maharashtra (12.8 million), Madhya Pradesh (10.5 million) and Rajasthan (10.5 million constitute 52 per cent children in the age group 0-6 years).

(iv) The proportion of child population in the age group 0-6 years to total population is 13.1 per cent, while the corresponding figure in 2001 was 15.9 per cent. The decline has been to the extent of 2.8 points.

(v) The share of children in the EAG states, at 53.2 per cent in 2011, has increased by about 1.3 per cent compared to 2001.

(vi) The proportion of child population in the age group 0-6 years to total population is indicative of fall/rise in fertility.

5. Sex Ratio:

Sex ratio is defined as the number of females per 1,000 males. In fact, all over the" world, males outnumber females. Sex ratio in the world is 986 females to 1,000 males.

According to 2001 census, sex ratio in India was 933 females to 1,000 males which increased to 940 in 2011.

The sex ratio in India is highly skewed. This is largely attributed to women's lower status in society which has contributed to their higher mortality rate in all age groups up to 45.

The fluctuating trend of sex ratio may be seen from the fact that in 1901 there were 972 females per 1,000 males, which declined to 930 in 1971, 934 in 1981 and 927 in 1991.

In 2001 the sex ratio was, however, 933 recording an increase of six females per 1,000 of males which rose to 940 females per 1,000 males in 2011.

In India, it is in the state of Kerala, where females have outnumbered males. According to the census of 2001, the sex ratio in Kerala was 1,058 females per 1,000 males which became 1,048 in 2011.

The lowest sex ratio was recorded in Haryana (877: 1000). The overall sex ratio at the national level has increased since 2001 census. This is the highest ever sex ratio since 1971. Increase in sex ratio is observed in 29 states/UTs. Three major states, viz., J&K, Bihar and Gujarat, have shown decline in sex ratio.

The child sex ratio at India level (914) is lowest since independence. Increased trend in the child sex ratio (0-6) is seen in Punjab, Haryana, Himachal Pradesh, Gujarat, Tamil Nadu, Mizoram and Andaman and Nicobar Islands. In all the remaining 27 states/UTs, the child sex ratio shows decline over the 2001 census.

Sex ratio in Russia is 1140, followed by France 1050, Japan 1041, USA 1031 and China 940.

The overall deficiency in sex ratio in India can be attributed partly to higher mortality of females and partly to their under enumeration in the census.

Females in India have always suffered from a lower status, right front the time of conception. Women's lower status in Indian society results in early marriages, lower literacy, poor nutrition and higher fertility and mortality levels, especially during the reproductive age.

Recently, the large metropolitan cities of Mumbai, Kolkata, Delhi, Chennai and Bangalore have experienced increasing incidence of female foeticide with the use of ultrasonography. The states of Haryana and Punjab are also having high incidence of female foeticide.

6. Fertility:

The fertility rate in India has been declining steadily. If there had been no contraception, the total fertility rates among married women might now be close to nine children.

The increase in natural fertility is mostly due to the relaxation of many traditional checks on fertility that prevailed in Indian society for ages and kept the fertility levels of Indian women well below the biological maximum, or the levels observed in Europe in the !8th and 19th centuries.

7. Literacy:

Any person above the age of seven years, who can read and write in any language, is treated as literate.

According to the 2011 census, over 74 per cent of the total population of India aged seven years and above is literate and remaining 26 per cent illiterate. Literacy rate has gone up from 64.88 per cent in 2001 to 74.04 per cent in 2011, showing an increase of 9.21 per cent

The literacy rate of males and females works out to be 82.14 per cent and 65.46 per cent respectively.

The increase in literacy rate in males and females during 2001-2011 has been of the order of 6.88 and 11.79 per cent respectively. The highest literacy rate is in Kerala being 93.91 per cent. The lowest literacy rate is in Bihar (63.82%). The female literacy rate is also highest in Kerala (91.98%).

The literacy rate at the state level has been plotted it may be observed that the highest literacy is in Kerala (93.91%), followed by Lakshadweep (92.28%) and Mizoram (91.58%).

The states of Bihar (63.82%), Rajasthan (67.06%), Andhra Pradesh (67.66%), Arunachal Pradesh (66.95%) Jharkhand, J&K and Uttar Pradesh have low literacy rates than the national average (74%).

It may be seen that the highest male literacy was in Kerala (96%), followed by Mizoram (93.7%) and Tripura (92.2%). The overall male literacy rate was 82.1 per cent.

The average female literacy rate is 65.46 per cent. The female literacy rate is also the highest in Kerala (91.98%), followed by Mizoram (89.40%) and Lakshadweep (88.25%).

Despite all these achievements, there are 272, 950, 015 (26%) illiterates in the country.

8. Expectation of Life/Life Expectancy:

Expectation of life refers to the average life of the people of a country. In India expectation of life of the people is very short. Currently, expectation of life in India is estimated to be 66 years as per 2011 Census. In other countries it is much longer than ours. For instance, in Australia, it is 79 years, in Japan 83 years, in England and America 79 years, in Sweden and in Canada 81 years.

The average life span of a child born in India has increased over the past four decades from 32.1 years during 1941-51 to 57.3 years in 1981-91 and about 66 years in 2011. This increase is largely attributed to the implementation of various programmes of public health and control of communicable diseases after independence.

Among the states, an expectation of life in 1991 of over 65 years has been observed only in Kerala and Punjab. Expectation of life below 60 years has been observed in Assam, Bihar, Gujarat, Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Uttaranchal, Jharkhand, Chhattisgarh and Uttar Pradesh. These are the states where the status of women, especially the female child, has been found to be considerably lower to that of the males.

9. Age Structure/Composition:

Age structure of a population in a country indicates the extent to which the population of that country is productive from the economic point of view.

Population in the age group 15-60 years is considered as working population while population in the age group 0-14 years and above 60 years is regarded as non-working/dependent population. Higher proportion of working population is beneficial for the economic development of the country.

In India, the percentage of population in the age group 0-14 years is still high. Besides, the percentage of population above 60 years is also increasing, which indicates higher life expectancy and reduction in death rate in the country.

10. Rural-Urban Differentiation:

Ratio of urban population to the total population of a country is an index of the level of industrialization of that country. As industries gather momentum in a country, ratio of urban population goes on rising. India is an agricultural country, so ratio of urban population here is less than the rural population. Some important facts related to rural-urban differentiation in population of India are described as under:

(i) According to 2011 census, about 30 per cent population was living in urban areas. As against it, 70 per cent of the population was living in rural areas.

(ii) In the last 100 years, percentage of urban population in the country has increased from 13 per cent to 30 per cent. It proves that in the economic life of India, role of cities has been increasing.

(iii) Compared to developed countries, the number of cities and the ratio of population living in urban areas are very low. Just about 30 per cent of population today lives in urban areas in India as against 80 per cent in England, 74 per cent in USA, 78 per cent in Japan, 83 per cent in South Korea, 91 per cent in Germany and 97 per cent in Belgium.

(iv) As per 2001 census, among India's major cities, Mumbai ranked first with a population of 1.64 crore, Kolkata second with a population of 1.33 crore, and Delhi third with a population of 1.28 crore.

Two main causes of rise in urban population in India are: (i) Migration Effect: Rural life in India suffers from many difficulties, such as less opportunities of employment, low level of income, lack of educational and training facilities, lack of health and medical facilities, etc. In order to get rid of these difficulties rural people migrate to urban areas.

National Population Policy of India

 It was long before procuring our Independence even that several discussion benches saw the onset of population policy. Much before Independence; in the year 1938 only a Sub Committee on population was set up by the National Planning Committee appointed by the Interim Government. The National Planning Committee passed a resolution in 1940 that stated the need for the state to adopt family planning and welfare policies in order to bring about a harmonious order of social economy. The resolution also stressed the need of limitation of children.

April, 1951 recorded further enhancements in this policy formulation as the First Five Year Plan labeled for an overt population policy and adjudged family planning as a pragmatic and essential step towards improvement in health of mothers and children. It was because in the plan, family planning was treated as a part of the health program and received a 100% funding from the centre government. And with each passing year, the amount of these funds has increased. The success of this family planning agenda was so dear to the heart of the government that even a separate department coined as Department of Family Planning was carved out in the Ministry of Health in the year 1966. This was done with an objective to reinforce the population control program.

This National Population Policy was further modified and re announced in 1977. In this new policy, what was reinforced was education and health. The latter component of the reformulated policy included the general as well as maternal and child health both. A voluntary family planning was also introduced here on. This also saw the change of the phrase from Family Planning to Family Welfare program that is maintained till date.