DNYANSAGAR ARTS AND COMMERCE COLLEGE

SUBJECT: BUSINESS DEMOGRAPHY

SUBJECT CODE: 106

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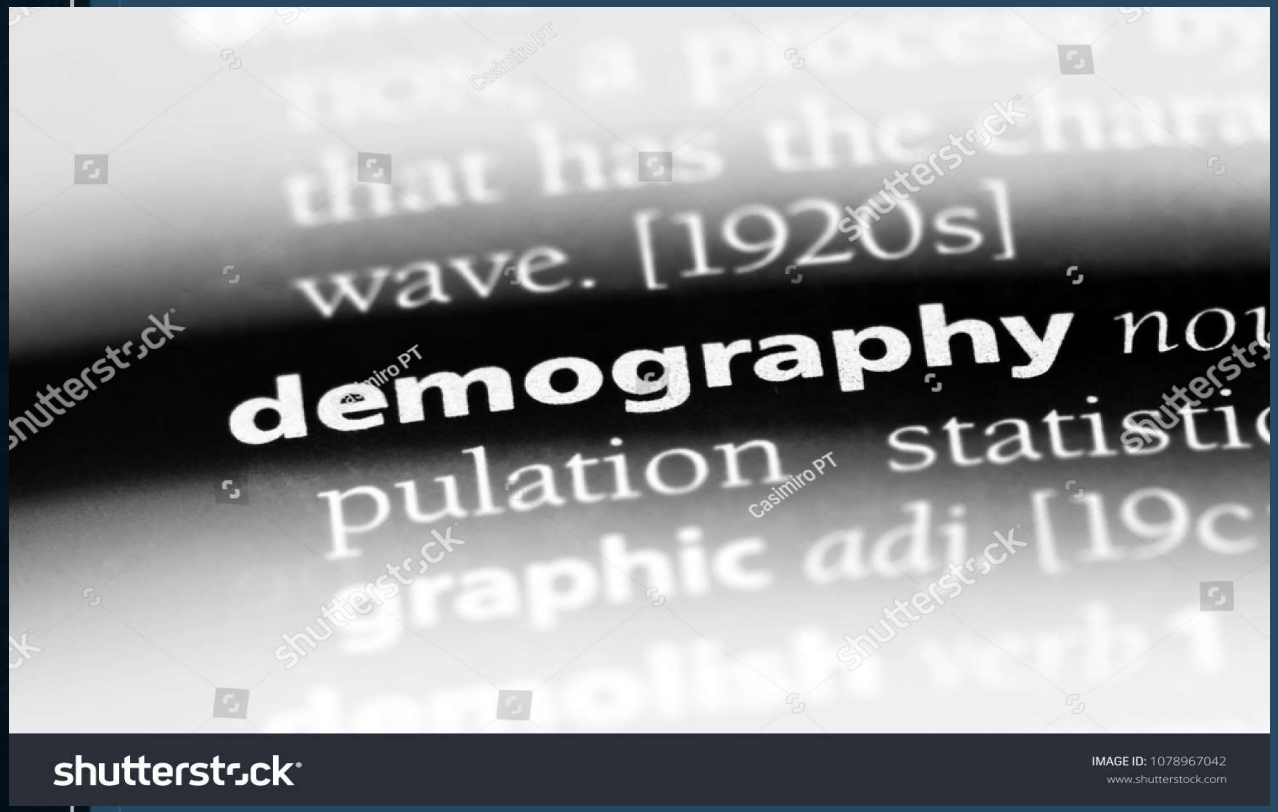
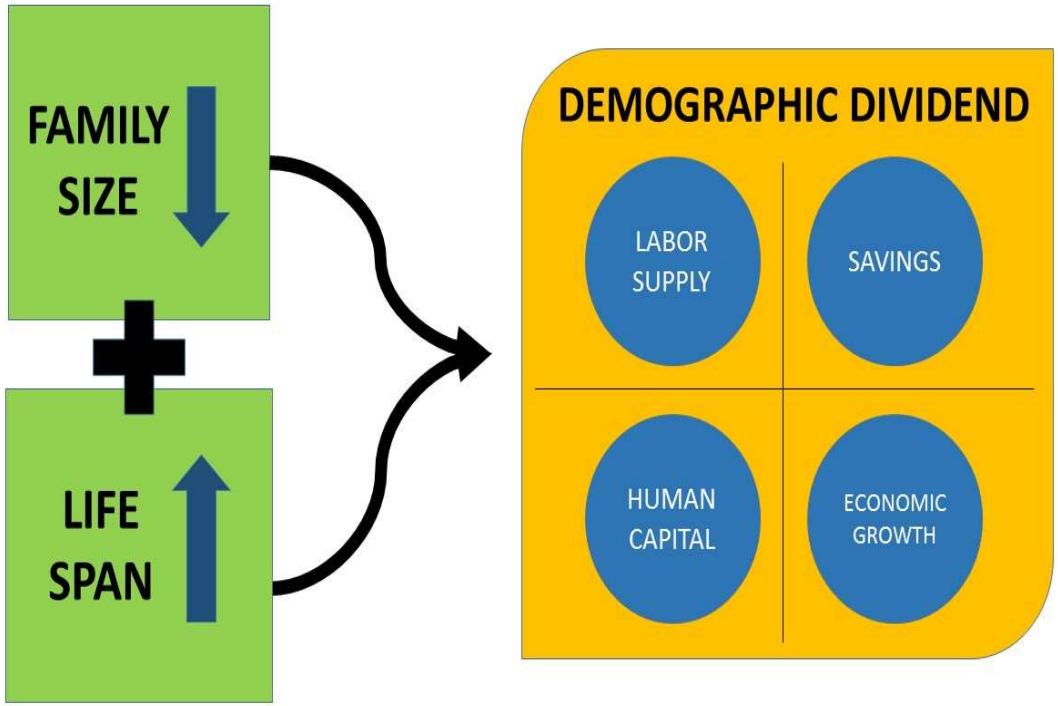


UNIT: 1
CONCEPT OF DEMOGRAPHY

MEANING AND DEFINITION OF DEMOGRAPHY



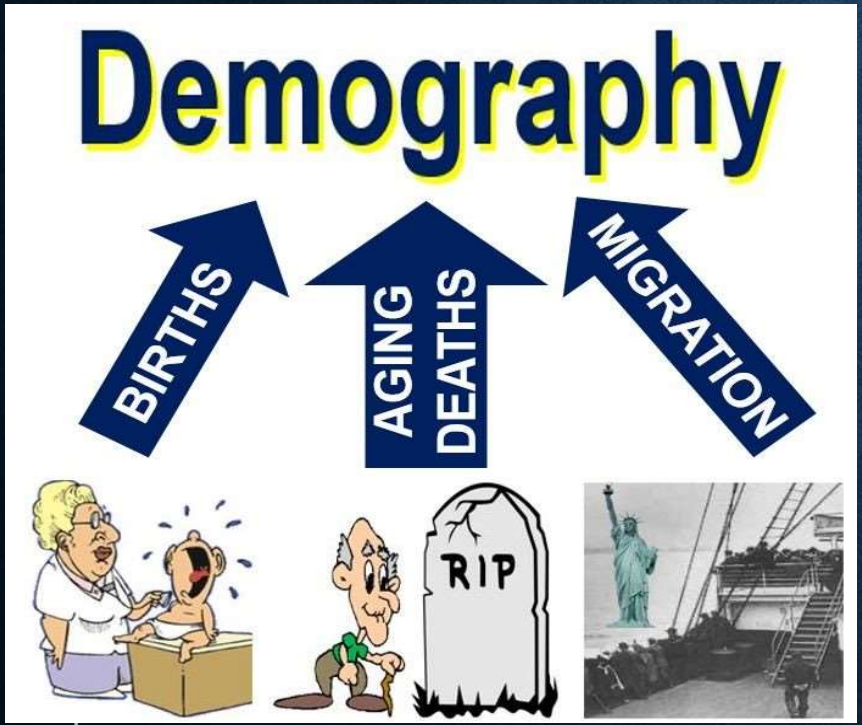
The word 'Demography' is a combination of two Greek words, 'Demos' meaning people and 'Graphy' meaning science. Thus **demography is the science of people.**

According to the UN Multilingual Demographic Dictionary, **"Demography is the scientific study of human populations, primarily with respect to their size, their structure and their development."**

IMPORTANCE AND NEED OF DEMOGRAPHY

1. For the Economy
2. For Society
3. For Economic Planning
4. For Administrators
5. For Political System

COMPONENTS OF DEMOGRAPHY



COMPONENTS

The 3 basic components of demography are:

- Mortality
- Fertility
- Migration

SCOPE OF DEMOGRAPHY

- **Subject Matter of Demography**
  - *Size and Shape of Population*
  - *Aspects Related to Birth Rate and Death Rate*
  - *Composition and Density of Population*
  - *Socio-Economic Problems*
  - *Quantitative and Qualitative Aspects*
- **Distribution of Population**
- **Theoretical Model**
- **Practical Aspects**
- **Population Policy**
- **Micro and Macro Study**
- **Demography as a Science**

FACTORS AFFECTING MORTALITY AND FERTILITY RATE

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Mortality Rate

Mortality or death is affected by a variety of factors.

They may be biological, physiological, environmental, etc.

From the demographic viewpoint, mortality is related to the age and gender of an individual.

There is infant mortality, mortality of woman at the time of delivery, mortality of man due to cancer of the prostate, etc.

In its Manual on the International Statistical Classification of Causes of Death, the World Health Organization (WHO)places them under the following five categories:

1. Infectious, parasitic and respiratory diseases
2. Cancer
3. Diseases of the circulatory system
4. Violence and accidents
5. All other causes such as diseases of the digestive system.

FERTILITY RATE

- **BIOLOGICAL FACTORS**
- **PHYSIOLOGICAL FACTORS**
- **SOCIAL FACTORS**
- **ECONOMIC FACTORS**
- **FAMILY PLANNING**

MEASURES TO CALCULATE FERTILITY RATE

1. **Crude Birth Rate (CBR)**

CBR is a ratio of total registered live births to the total population during a specific year, multiplied by 1000

CBR =ΣB/ ΣP X 1000

B is number of live births in a year

P is the mid-year total population

2. **General Fertility Rate (GFR)**

Contrary to crude birth rate this measure uses the number of women of child bearing age in a population as a base for the calculation rather than total population. It is a great improvement over CBR because in it only the population of reproductive age group is taken into consideration. It considers only the female population of reproductive age group.

GRR= ΣB/ ΣF X 1000 here, B= registered live births in the year, F= mid year female population (15-49 yrs.)

3. **Age Specific Fertility Rate (ASFR)**

The ASFR is preferred over other fertility rates, since it considers the fact that women of all reproductive age groups do not have same fertility.

ASFR= B/F X1000

B= Birth in a specific age group

F= mid year women population of that age group

4. **Total Fertility Rate (TFR)**

This measure is regarded as the best single cross sectional measure of fertility. It is most sensitive and meaningful measure of fertility. If the TFR is two, it means that parents are replacing themselves and the population remains static. However in the end the population with TFR at two, will decline as all the mothers will not survive till the end of the reproductive period.

TFR= ΣASFR X I here, I = class- interval

5. **Gross Reproductive Rate (GRR)**

The total fertility includes all births, both male and female. The GRR shows how many girls babies, potential future mothers, would be born to 1000 women passing through their child bearing years.

GRR= TFR/ 2

6. **Net Reproductive Rate (NRR)**

It is used to indicate generational replacement. It is quite easy to interpret. An NRR of one, means that a population will replace itself but will not grow. An NRR of less than one indicate that the population is not replacing itself and if the rate continues, the population will decline. If NRR is more than one, it means that the population is not only replacing itself but it is also growing.

NRR= GRR X SURVIVAL FACTOR

GROWING IMPORTANCE OF MODERN ECONOMICS AND SOCIETY

1. Job creation
2. Industry diversification
3. Business retention and expansion
4. Increased tax revenue
5. Improved quality of life

UNIT-2
DISTRIBUTION OF POPULATION AND POPULATION GROWTH

DENSITY AND POPULATION DISTRIBUTION

- Population distribution is the spread of people across the world i.e. where people resides.
- Population density is the number of people living in a particular area, usually1 sq.km, and can be written as total population / land area.
- The **population** of the world is now over 7 billion people, the vast majority of whom live in the developing world. The world's population is spread unevenly across the globe with concentrations of large numbers of people living in the same area. The world as a whole has more 'empty' areas than 'crowded' areas.

FACTORS AFFECTING THE POPULATION DISTRIBUTION

1. Physical Factors

- Climate
- Relief
- Natural resources
- Soils

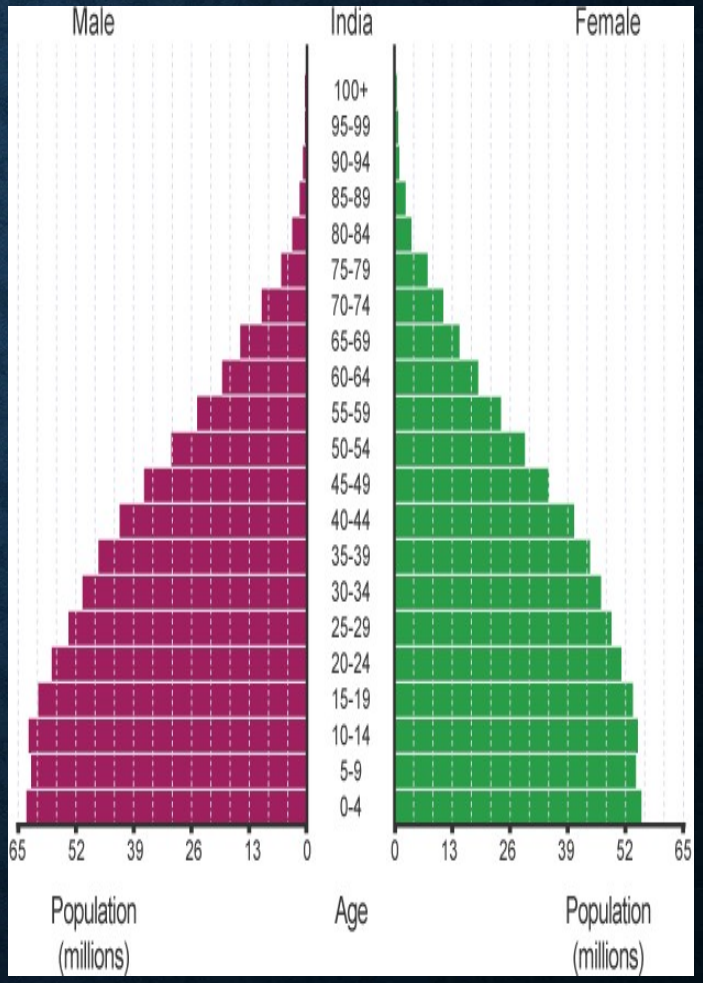
2. Human Factors

POPULATION STRUCTURE

The population pyramid of India shows high birth and death rates and low life expectancy.

The effects of this population structure are as follows:

- Too many young people, puts an added strain on services e.g. health care.
- Extra money is required to build more schools to accommodate children.
- The Government has to spend more money on education and less money elsewhere e.g. industrial development.
- More children born means that more maternity hospitals and schools are needed.
- More teachers and midwives are required to be trained.
- In the future, too many people of working age to fill job vacancies.
- Unemployment and poverty increase.



CONCEPT OF OVER AND UNDER POPULATION

- **Over-population** is when there are too many people, to be supported to a good standard of living, by the resources of a region or country.
- **Under-population** is when a region or country has insufficient workers to exploit their resources efficiently, to support retired populations and to provide growth. i.e. too few people to use all the resources of an area to the maximum efficiency. Rural areas in LICs may become under-populated where agricultural production has fallen and depopulation has occurred. It could also happen when land in rural areas is abandoned as people migrate to urban areas, natural hazards, war and communicable diseases such as HIV.

OVER POPULATION

The main cause of overpopulation is high birth rates and falling death rates, leading to natural increase. The impacts of over-population include:

- Water – around the world more than 1 billion people do not have access to safe drinking water. Over-population puts significant demand on agricultural production, which in itself consumes more water than any other sector.
- Food – by 2050 the global demand for food could be greater than production. Almost a billion people didn't have enough food to lead a healthy life in 2015.
- Environment – climate change, due to human emissions of greenhouse gases, is a major consequence of overpopulation. The impact of climate change includes more extreme climate events, loss of natural ecosystems and sea-level rise.
- Services – pressure is put on services such as education, health care and social services due.

UNDER POPULATION

Most areas considered under-populated today are large in area and rich in resources. Examples include Canada, Australia and Mongolia.

The impacts of under-population include:

- a shortage of workers
- fewer people to pay tax
- closure of services
- wasted resources

METHODS OF ASSESSMENT OF POPULATION GROWTH

BASIC OF POPULATION GROWTH

All populations change in size with time

- if births exceed deaths, the population grows
- if deaths exceed births, the population shrinks
- only when births equal deaths does the population stay the same

OTHER FACTORS OF POPULATION GROWTH

Populations can also change size if organisms move in (immigration) or leave (emigration)

ON BRINGING THEM TOGETHER

We can write a simple equation to show population growth as:

Change in Population Size = (Births + Immigration) - (Deaths + Emigration)

EXAMPLE

Suppose we had a population of 100,000 individuals. Suppose in one year there were 1000 births, and 500 deaths. Thus, percentage of population will be:

Birth percentage = 1000/100,000 = 0.01, or in percentage terms, this is 1% of the population.

Death percentage = 500/100,000 = 0.005, or in percentage terms, this is 0.5% of the population.

If immigration and emigration are equal they get cancelled out from the equation. Now, on subtracting deaths from births net growth will be:

1000-500/100,000 = 500/100,000 = 0.005, or 0.5% net growth

Therefore this population would be growing by 0.5% this first year. That means that after one year, there will be 500 more individuals than the previous year. So, after one year, the population would be 100,500 individuals.

THE NET REPRODUCTIVE RATE

The net reproductive rate (r) is the percentage growth after accounting for births and deaths.

Net reproductive rate (r) is calculated as:

r = (births-deaths)/population size or to get in percentage terms, just multiply by 100

In the example above, the population reproductive rate is 0.5%/yr.

Now, as we came back many years later, the net reproductive rate was still the same, but now the population had grown to 1,000,000. So, the new individuals that have been added each year will be-

Simply multiply the population by the reproductive rate:

1,000,000 x 0.05 (which is 0.5%) = 50,000

This means that now 50,000 new individuals are added in one year!! The net reproductive rate is the same as before, but because the population is so much bigger, many more individuals are added.

UNIT-3
URBANISATION AND ITS IMPLICATIONS

CONCEPT OF URBANISATION

- In demography, **urbanization** refers to the process of population concentration whereby **populations move from a rural area to an urban one**, leading to a relative rise in the number of city dwellers. Urban geography considers **urbanization** a local phenomenon.
- **Urbanization** results from a natural increase in the **population** and **rural** to urban migration. **Urbanization affects** the physical environment through the impacts of the number of people, their activities and the increased demands on resources.

FACTORS AFFECTING URBANIZAION AND RURAL POPULATION

- Economic, political, and social issues merge with circumstances of modernization to make people want to migrate from rural to urban areas.
- **Industrial Growth:** The explosion of industrialization and manufacturing enterprises within a certain urban area gives rise to more employment opportunities — which is another factor of urbanization.
- **Employment:** Rural areas commonly are agricultural. Urbanization and industrial growth create opportunities for jobs that pay more, are more diverse, and may be less physically demanding.
- **Social Factors:** Many urban areas allow for better living standards, including superior educational facilities, better access to healthcare, modern housing, and more recreational activities.
- **Economic Problems:** Many people may choose to migrate from a world area, as it is generally not as economically stable or wealthy as a booming urban city.
- **Political Turmoil:** War, civil unrest, and other sources of political disorder often are woes of developing areas. This turbulence — and potential danger — can be enough to make anyone want to move.
- **Modernization:** New technology upgrades the infrastructure of urban areas. Better communication, medical facilities, and various social amenities can attract those from rural areas.

FEATURES AND IMPORTANCE OF URBANISATION

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FEATURES

- Fast Growth in Urban Population
- Large Increase in big towns
- Regional Disparities in Urbanization

IMPORTANCE

- Supply of basic amenities and facilities
- Improvement in the economy
- Better living condition
- Convenience and access to educational service, health and jobs
- Social diversity
- Focussed political concentration

VARIOUS DETERMINANTS OF MIGRATION

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- Increases in income differentials across countries often lead to increases in migrant flows
- Strong migrant networks have historically played a large role in enhancing migrant flows.
- Macroeconomic conditions at home and abroad can affect the flow of migrants.
- Demographic factors such as age, education, marital status, and language impact one's willingness to migrate.
- The push factors are **poverty**, lack of work opportunities, unemployment and underdevelopment, poor economic condition, exhaustion of natural resources and natural calamities, scarcity of cultivated land, inequitable land distribution, low agricultural productivity .
- The pull factors are- demand for labour, high wages, low cost of living, family and friends network, property rights.

UNIT-4
POPULATION AS RESOURCES

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IMPORTANCE OF HUMAN RESOURCE AS DEVELOPMENT OF NATION

1. Utilization of natural resources
2. Compensate the deficiency of natural resources
3. Utilization of physical capital
4. Increase production
5. Reform in tradition cultural and attitude
6. Increase in managerial capacity and entrepreneurship
7. Development of agriculture and industry
8. Remove economic background

CONCEPT AND IMPORTANCE OF LITERACY

In the past, definitions of literacy focused on only the ability to read and write print texts, but these definitions are no longer enough for the modern world, it must include those facets of literacy as we know it today: not only the basic view of literacy as the ability to read and write but also what are termed social literacy, critical literacy, mathematical literacy, cultural literacy and technological literacy.

Importance of literacy

1. An essential component of social justice
2. Enhances effective learning skills in students
3. Country's social and economic development
4. Interpret a wide range of texts
5. Technological advances
6. Online learning

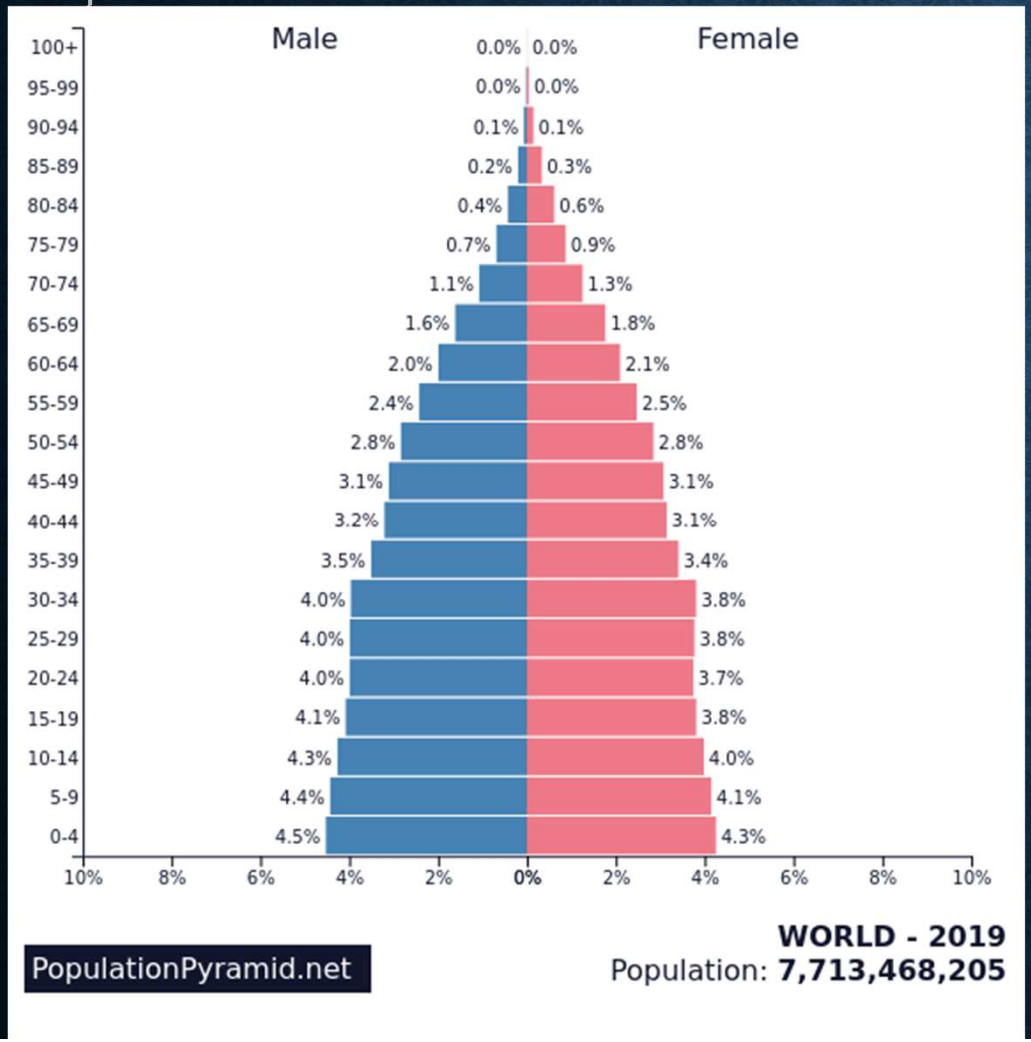
CONCEPT OF SEX RATIO

The ratio of males to females in a population is called the **sex ratio**, and it can have a pretty big impact. The sex ratio, at its broadest, applies to any species with male and female sexes. But when we use the term sex ratio, we actually could be talking about a few different things. The **primary sex ratio** is the ratio at fertilization, or the sex ratio of unborn offspring in a population. The **secondary ratio** recalculates this as the ratio at birth, and the **tertiary sex ratio** is the ratio at sexual adulthood. There's actually a fourth one as well, the **quaternary sex ratio**, which calculates the male/female ratio in adults past the age of sexual reproduction.

By measuring these four different ratios, you get a good idea of what's going on in a population throughout an average lifetime. Ideally, all of these ratios should stay roughly balanced, but imagine that one of them, let's say the ratio at adulthood, is greatly off. That means that somewhere between birth and adulthood, you have a lot more females dying than males, or vice versa, so now you know there's an issue here that needs addressing.

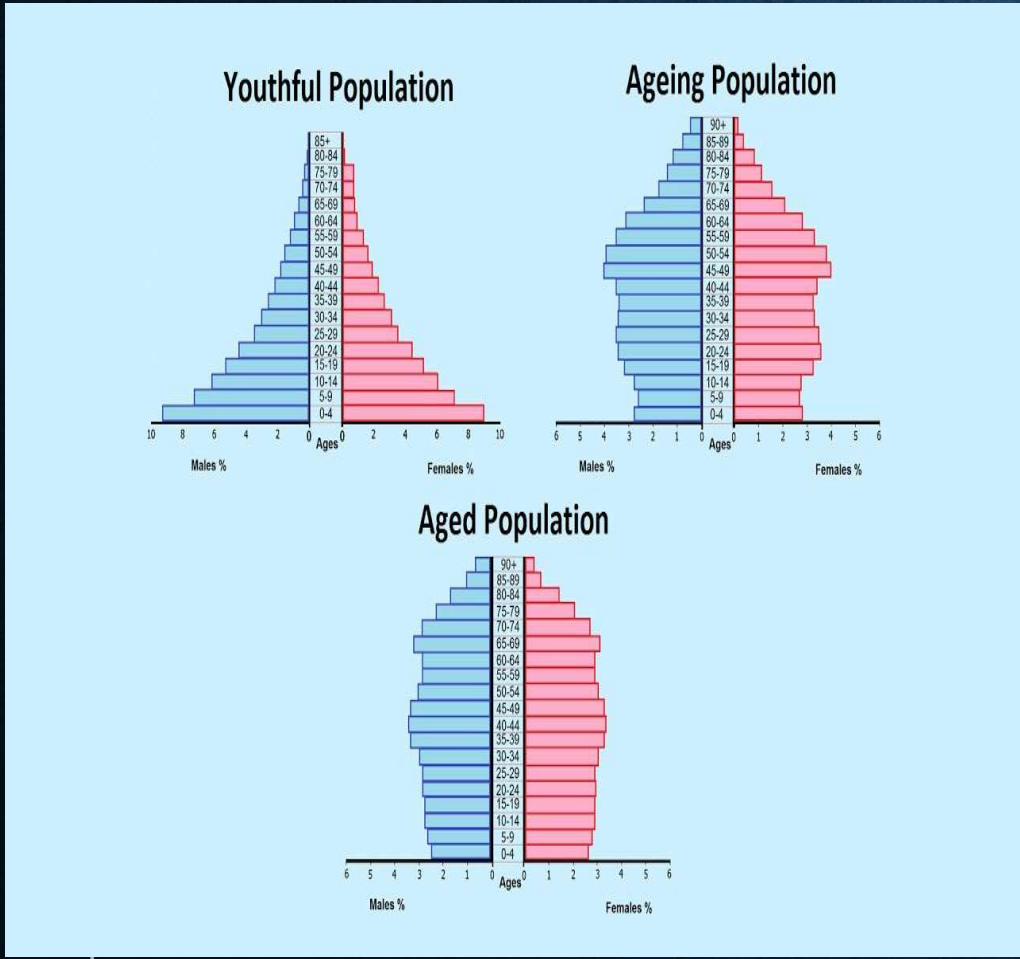
For almost all species, including humans, the average sex ratio is about the same at **1:1** which means an average of one male to one female. That's a simple ratio, although it's also common to see it in terms of 100s. A perfectly balanced ratio in that form would look like this: **100:100**.

AGE AND SEX PYRAMID



An age-sex pyramid breaks down a country's or location's population into male and female genders and age ranges. Usually, you'll find the left side of the pyramid graphing the male population and the right side of the pyramid displaying the female population.

- Along the horizontal axis (x-axis) of a population pyramid, the graph displays the population number. It can represent a *total* population of that age—the total number of males/females who are of a certain age. Or, the number can stand for a *percentage* of the population at that age—how many percent of the *entire* population are of a certain age. The center of the pyramid starts at zero population and extends out to the left for males and right for females in increasing size or proportion of the population.
- Along the vertical axis (y-axis), age-sex pyramids display five-year age increments, from birth at the bottom to old age at the top.



This entry provides the distribution of the population according to age. Information is included by sex and age group as follows:

- *0-14 years (children)*,
- *15-24 years (early working age)*,
- *25-54 years (prime working age)*,
- *55-64 years (mature working age)*,
- *65 years and over (elderly)*.
- The age structure of a population affects a nation's key socioeconomic issues. Countries with young populations (high percentage under age 15) need to invest more in schools, while countries with older populations (high percentage ages 65 and over) need to invest more in the health sector. The age structure can also be used to help predict potential political issues. For example, the rapid growth of a young adult population unable to find employment can lead to unrest.

CONCEPT OF WORKING AND DEPENDENT POPULATION

The concept of working and dependent population could be understood through the study of dependency ratio.

What Is the Dependency Ratio?

The dependency ration is a measure of the number of dependents aged 0 to 14 and over the age of 65, compared with the total population aged 15 to 64. this demographic indicator gives insight into the number of people of non- working age, compared with the number of those of working age. It is also used to understand the relative economic burden of the workforce and has ramification for taxation.

The dependency ratio is also referred to as the total or youth dependency ratio.

The Formula for the Dependency Ratio Is

$$\text{Dependency Ratio} = \frac{\text{No. of dependents}}{\text{Population Aged 15 to 64}} \times 100$$

Key points of dependency ratio

- As the overall age of the population rises, the ratio can be shifted to reflect the increased needs associated with an aging population.
- A high dependency ratio means those of working age, and the overall economy, face a greater burden in supporting the aging population.
- The youth dependency ratio includes those only under 15, and the elderly dependency ratio focuses on those over 64.
- The dependency ratio is adjusted to reflect more accurate dependency. This is due to the fact those over 64 often require more government assistance than dependents under the age of 15.

Limitations of the Dependency Ratio

- The dependency ratio only considers age when determining whether a person is economically active. Other factors may determine if a person is economically active aside from age including status as a student, illness or disability, stay-at-home parents, early retirement, and the long-term unemployed.
- Additionally, some people choose to continue working beyond age 64.