TOPIC 3: POPULATION AND SIZE
DEFINITION

- The term population refers to the total number of people inhabiting a particular geographical area at a specified time.

- The three basic elements that shape the size, composition and distribution of human population are fertility, mortality and migration (discussion about fertility, mortality and migration will be done in topics 4, 5 and 6 respectively).
World’s Population Overview

- The world population is the total number of living humans on Earth.

- As of today, it is estimated to number 7.074 billion by the United States Census Bureau (USCB).

- The USCB estimates that the world population exceeded 7 billion on March 12, 2012.

- According to a separate estimate by the United Nations Population Fund, it reached this milestone on October 31, 2011.
World’s Population Estimation
World’s Population by Continents

- Asia: 60.39%
- Africa: 14.82%
- Europe: 10.70%
- Latin America: 8.56%
- North America: 5.00%
- Oceania: 0.53%

Source: UN Department of Economic and Social Affairs
Largest Populations by Country

**POPULATION OF THE MOST POPULOUS COUNTRIES, 2012**

- **China**
- **India**
- **USA**
- **Indonesia**
- **Brazil**
- **Pakistan**
- **Nigeria**
- **Bangladesh**
- **Russian Federation**
- **Japan**
- **Mexico**

The chart shows the population distribution among the most populous countries in 2012. China leads with 59%, followed by India at 18%, and the USA at 4%. The rest of the world comprises 19% of the population.
## BASIC CONCEPTS

<table>
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<th>Concepts</th>
<th>Explanation</th>
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<tr>
<td>Population growth</td>
<td>change of population over time</td>
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<tr>
<td>Growth rate</td>
<td>The change in population over a unit time period is expressed as a percentage of the population at the beginning of the time period. population at end of time - population at beginning of time / by population at beginning of time.</td>
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<td>Growth ratio</td>
<td>A growth ratio of zero indicates that there were the same number of people at the two times -- net difference between births, deaths and migration is zero.</td>
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<td>Concepts</td>
<td>Explanation</td>
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<tr>
<td>Over Population</td>
<td>Population exceeding the carrying capacity of an area or environment. It may be caused by growth in population or by reduction in capacity of the area to fulfill the demands of population eg. infertile land. Increase in human population can cause problems like hunger, pollution</td>
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<tr>
<td>Lack of Population</td>
<td>Under population: population is not large enough to maintain an economic system. Population decline (depopulation): reduction over time of the population in a region. It can be caused by either limited immigration, emigration, disease, war, famine or sub replacement fertility (fertility not sufficient to replace population).</td>
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# BASIC THEORIES

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<th>Theory</th>
<th>Basic Arguments</th>
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<td>Malthus' Theory</td>
<td>Introduced by Thomas R. Malthus in 1798.</td>
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<td></td>
<td>The theory suggests that population increase in geometrical ratio whereas food supply increase in arithmetical 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.</td>
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<tr>
<td>Demographic Transition Theory</td>
<td>Developed by American Demographer, Frank Notestein (1945).</td>
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<td>The theory suggests that population growth has taken place across the globe in three stages – the pre-modern stage, early industrial stage and mature industrial stage.</td>
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Malthus’ Theory

• One of the earliest attempts to understand population growth began two centuries ago, at the beginning of the Industrial Revolution in Europe when an English clergyman, Thomas Robert Malthus (1766-1843) published his Essay on the Principle of Population (1798).

• Malthus argued that there exists an immutable passion between the sexes that leads to reproduction and that societies have a limited ability to produce food.

• The consequence of this, he believed, is that the human population tends to grow at a faster rate than does the ability to produce food.

• If these tendencies continue unchecked, then populations will eventually grow larger than the food supply can support.
• Malthus believed that human beings could intercede in this process and control population growth by postponing marriage or remaining celibate, but he was pessimistic about whether human intervention would completely save the day.

• He thought populations would continue to grow ultimately being checked by death due to starvation, disease and war.
Malthus' Basic Theory

Point of Crisis --->

Population

Resources
Demographic Transition Theory

• The effects of modernity on population patterns are illustrated by Demographic Transition Theory, which was developed in 1945 by American demographer Frank Notestein.

• Demographic transition theory suggests that population growth has taken place across the globe in three stages.

• In the first stage, the premodern stage, population growth is slow because high birth rates are offset by high death rates.

• Next, in the early industrial stage, societies undergoing industrialization begin to have rapid population growth.

• This is because birth rates remain high, in keeping with past customs of having many children, but death rates decline as a result of improved living conditions and technological advances in medicine.
Finally, in the mature industrial stage, population growth slows because birth rates tend to drop to levels approximately equal to the lower death rates.

When people live longer, fewer children are born.

Smaller families mean fewer people to support economically.

More effective means of birth control make this lower birth rates possible.

Notestein’s model repudiates that of Malthus’ theory.

Malthus felt that without wars, famines, epidemics or better means of birth control, the world would become so overpopulated that starvation would be widespread.

Malthusian theory did not anticipate that people would change their childbearing patterns and deliberately reduce population growth.
Frank Notestein
Demographic Transition Theory

- **Pre-industrial stage:** Birth rates and death rates are high.
- **Transitional stage:** Birth rate declines due to increased opportunities for women and access to birth control. Population increase.
- **Industrial stage:** Death rate declines due to increased food production and improved medical care. Birth rates and death rates are low.
- **Post-industrial stage:**
Malaysia's population comprises many ethnic groups, with the politically dominant Malays comprising a plurality. By Constitutional definition, all Malays are Muslim. More than a quarter of the population is Chinese. They have historically played an important role in trade and business.

Malaysians of Indian descent comprise about 7% of the population and include Hindus, Muslims, Buddhists and Christians. About 85% of the Indian community is Tamil.

Non-Malay indigenous groups make up more than half of Sarawak's population and about 66% of Sabah. They are divided into dozens of ethnic groups but they share some general patterns of living and culture. Until the 20th century, most practiced traditional beliefs, but many have become Christian or Muslim.

The "other" category includes Malaysians of, inter alia, European and Middle Eastern descent.
Factors to Population in Malaysia

Marriage at a young age

Marriage among women in the younger age is the main contributor to the increase in births.

- Phenomenon also increase in births caused by cultural and religious factors.
- Traditional Malay culture, children are regarded award from Allah.
- Birth rate is also high due to failure in planning the number of family members.
- Level of fertility in Malaysia in general is still high, especially Malays compared to the Chinese and Indians who see the education system and career more important than the number of children.
- This situation will give a large impact on population growth in the birth of Malaysia.
Population Policy

Changes in population structure has long-term effects for the economy and social structure.

• In Malaysia, the population policy is considered as a factor affecting the population.
• Vision national policy emphasizes the development of energy resources and the need to achieve economic stability.
• The main purpose of population policy is to maintain a balanced population growth with resource and national development.
• At the end of the 1980s, the Malaysian Government has planned population growth to achieve 70 million people in the 21st century.
• Seeks to meet the needs of employment in 2020.
• To achieve that goal, the government has cut income tax liability until the fifth child.
• Other initiatives is to provide maternity leave for employees in the public sector.
• For male workers, they also granted special leave when his wife gave birth.
• Government also encourages employers to provide childcare places close to work for the career women.
Technological advances

• The emergence of technology assist in the daily human activities.
• With the emergence of technology health, population more secure.
• Birth rate is higher due to increasing energy experts.
• Infrastructure in facilities such as health clinics and hospitals increased.
• Various types of medication can be produced.
• Effects on the spread of disease can be prevented immediately.
• Diseases dangerous and easily spread, such as malaria, cholera and tetanus also reduced due to the emergence of technology in medicine.
• Besides death resulting from disease can be reduced due to the discovery of medicines in the treatment of the disease process.
POPULATION TRENDS IN MALAYSIA

• Total population of Malaysia is still small and have large benefits if the population grew up in Malaysia in the planning period.

• Compared with other countries, Malaysia and the region of 334,000 sq km area has a population of 45 million, with the Thai State 514,000 sq km area has a population of 50 million and the Republic of Indonesia by land area of 2,027,087 sq km has 150 million.

• Malaysia experienced current population growth rate of 2.5% * for the period 1981-1985.

• Based on this rate, the population is estimated to be 15,279 million in 1984, ie an increase of 11.2% of the total 13,745 million in 1980. Growth rate for period-specific period are as follows: --

<table>
<thead>
<tr>
<th>Period Growth Rates</th>
<th>Rate</th>
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<tr>
<td>1957 - 1960</td>
<td>2.8%</td>
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<tr>
<td>1960 - 1970</td>
<td>2.6%</td>
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<tr>
<td>1970 - 1980</td>
<td>2.3%</td>
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<tr>
<td>1980 - 1985</td>
<td>2.5%</td>
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• Comparison between the duration of the above shows that the growth rate is now slightly higher than the growth rate for 1970-1980.

• This is due to higher fertility rates in five years and six tens and tens of increasing the number of young women who reach the age of marriage.

• However, based on current population growth trends, population is expected that Malaysia will achieve total stability in range 39 million people in 2150.

• Until recently, the Malaysian population continues to grow at a rate of 2.4% per annum.

• According to latest 2010 census, among the three largest Malaysian groups Malays and Bumiputra, fertility rates are at 2.8 children per woman, Chinese 1.8 children per woman, and Indians 2.0 children per woman.
• Malay fertility rates are 40% higher than Malaysian Indians and 56% higher than Malaysian Chinese.

• In 2010, the Malays were 60.3%, Chinese 22.9%, and the Indians 7.1% of the total population.

• The Chinese population has shrunk to half of its peak share from 1957 when it was 45% of Malaysia, although in absolute numbers they have multiplied more than threefold.

• The population distribution is uneven, with some 20 million of 28 million citizens concentrated in Peninsular Malaysia which has an area of 131,598 square kilometres (50,810.27 sq mi).
Malaysian Population Growth 1960 - 2100

From the two different trends emerging from the raw historical data, it appears that we may have a population explosion by 2060.

- Dr. Peter Achutha, 13 Feb 2012

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