



Unit 2: Population and Migration



Population Density

- **Measures the average number of people in an area**
 - ◆ Calculated by dividing the population by the total area
- **Arithmetic Population Density**
 - ◆ Calculated by dividing a region's population by its total area
 - ◆ Says little about population distribution
 - ◆ Even distribution: people are evenly dispersed throughout the area
 - ◆ Cluster distribution: people are clustered or nucleated in one part of an area
 - ◆ Linear distribution: people are spread out in a line, usually along a river or transit route
- **Physiologic Population Density**
 - ◆ Calculated by dividing population by arable land (land that can grow crops)

Population Density

→ Physiological Population Density (cont.)

- ◆ Much more useful when trying to determine a regions carrying capacity
- ◆ Countries with high physiological density need high crop yields and may require assistance from other countries to meet their agricultural requirements

→ Agricultural Population Density

- ◆ Measures the number of farmers to the total area of arable land
- ◆ Developed countries have lower agricultural densities have more advanced technologies
- ◆ Less developed countries have lower densities due to the lack of access to technology, thus they depend on labour equal, increasing farm labor

Overpopulation

- Lack of necessary resources to meet the needs of the population of a defined area.
- Dependent on an area's population distribution and density
 - ◆ Another factor is the area's carrying capacity

| | |
|-------------------------------|----------------------------|
| 1. China: 1,389,060,000 | 6. Brazil: 208,620,000 |
| 2. India: 1,327,510,000 | 7. Nigeria: 193,392,500 |
| 3. United States: 326,576,000 | 8. Bangladesh: 163,944,000 |
| 4. Indonesia: 261,890,900 | 9. Russia: 146,877,000 |
| 5. Pakistan: 210,487,000 | 10. Japan: 126,590,000 |

- **underpopulation**: more resources than the number of people in an area.
- ◆ Why would this be a problem? Think about life after the Black Plague, maybe?
 - ◆
- **carrying capacity**: ability of the land to sustain a certain number of people (the problems of overpopulation exist when this capacity is reached)



Population Distribution

- **The pattern of human settlement- the spread of people across the world**
- **Physical Factors**
 - ◆ Midlatitudes, low-lying areas, fresh water, and other resources
- **Human factors**
 - ◆ Originally people settled because of natural features and resources
 - ◆ People now settle around transportation hubs and trade routes
 - ◆ Cultural and political decisions
 - Large Mormon population in Utah is an example

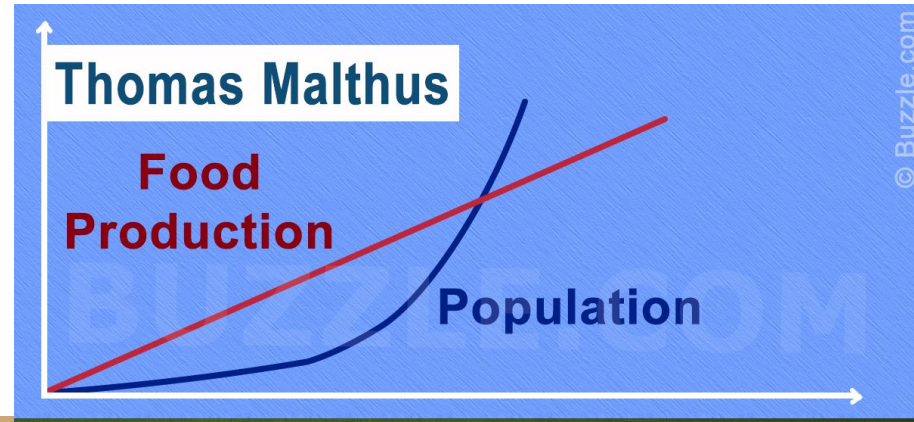


Population Theories and Theorist



Thomas R. Malthus

- Wrote *An Essay on the Principles of Population*, 1798
- Believed population was increasing faster than food sources
 - ◆ Food grows linearly, but population grows exponentially
 - ◆ Would eventually lead to mass starvation and death
- Never took into account a globalization
- Did rightly predict overpopulation



Neo-Malthusian

- Followers share the concerns on Malthus, concerned about human suffering
- Governments and societies should take steps to curb the growth of populations.
 - ◆ Anti-natalist policies: programs to decrease the number of births
- **Opposing View**
 - ◆ new technologies/resources increase food production, population increase stimulates these changes in agricultural techniques (Non-Malthusian)

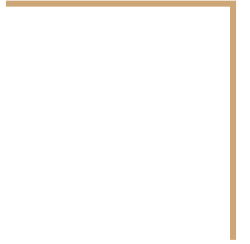


Paul Ehrlich

- Wrote The Population Bomb
- Presented a Neo-Malthusian scenario of a population explosion



Population Growth and Decline



Measuring the Number of Births

- **Crude Birth Rate (CBR):**
 - ◆ number of live births per year for each 1,000 people
- **Total Fertility Rate (TFR)**
 - ◆ Focuses on women in their childbearing years(15-49)
 - ◆ The average number of children who would be born per woman
- **TFR tends to show social norms**



Life Expectancy

- Number of years the average person will live
- Most important factor for the increase of the global population
- Infant Mortality Rate
 - ◆ Number of children who die before their 1st birthday per 1,000 live births
 - ◆ Biggest factor to the increase in life expectancy
- Other reasons for increase
 - ◆ Better food production and nutrition
 - ◆ Advancements in public sanitation
 - ◆ Improvements in healthcare

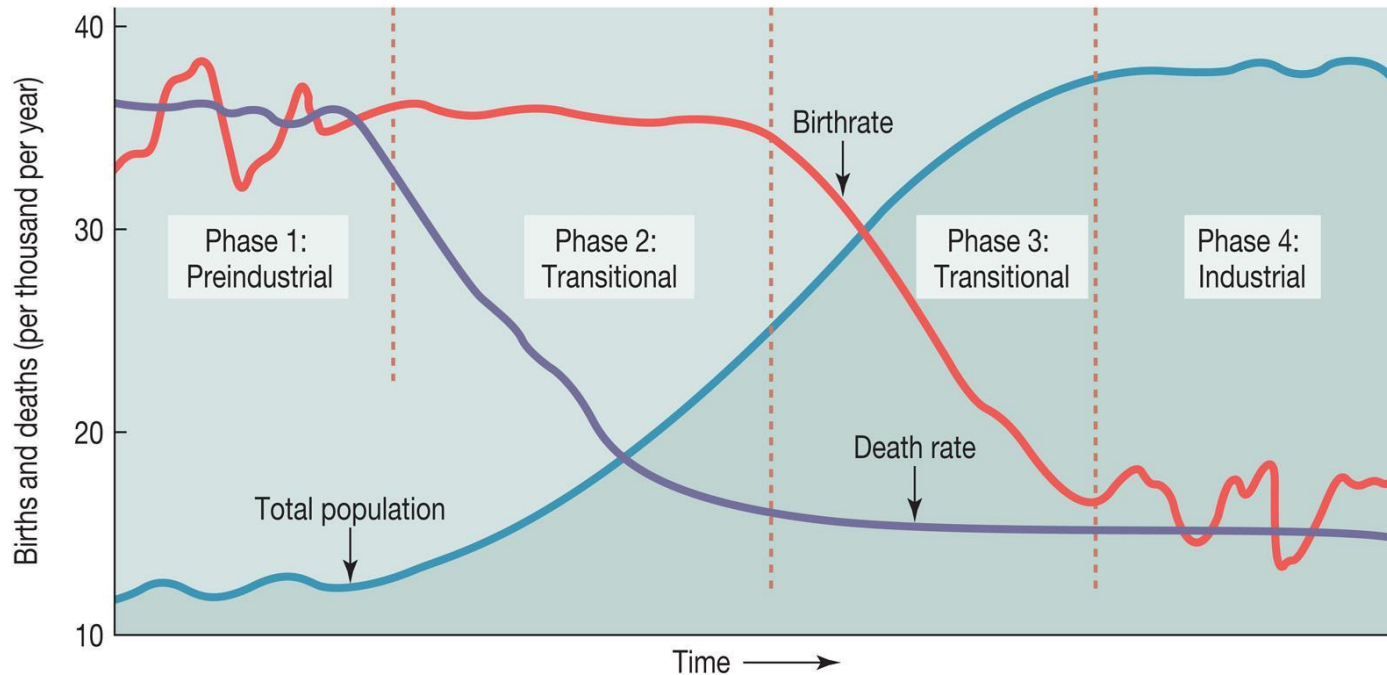
Measuring Population Growth

- **Rate of Natural Increase**
 - ◆ Uses rates instead of total numbers to compare countries of different sizes
 - ◆ Shows the percent of population growth
- **Equation: $RNI = (CBR - CDR) \div 10$**
 - ◆ Crude Death Rate (CDR): deaths per 1,000 people
- **Demographic Balancing Equation**
 - ◆ Total Population Change = births - deaths + immigrants - emigrants

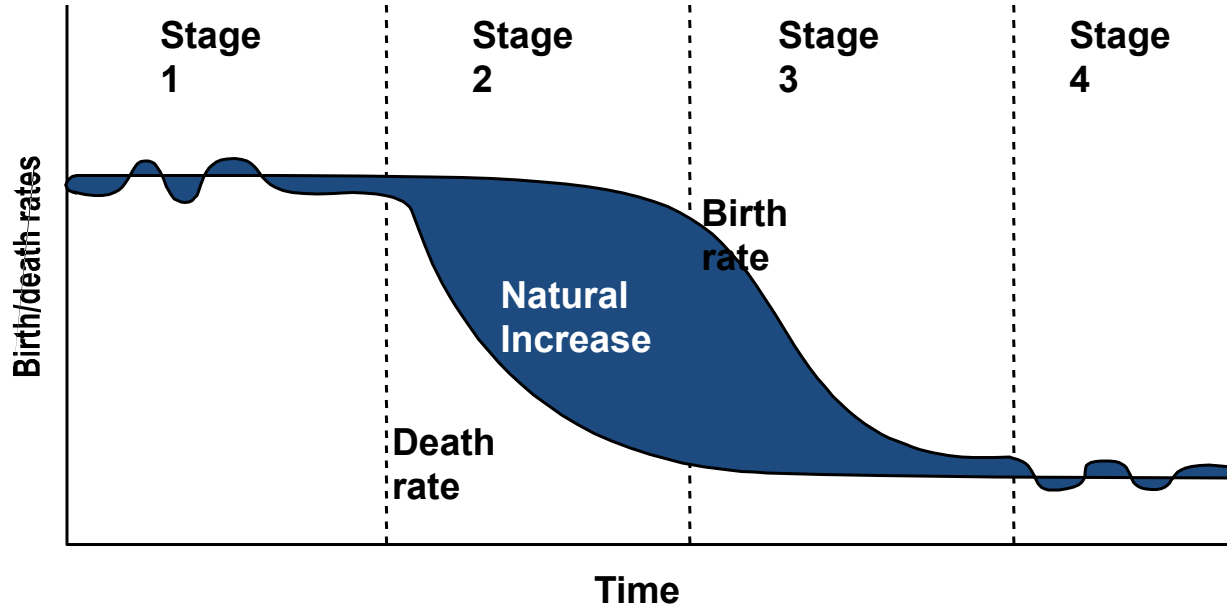


Demographic Transition Model (DTM)

→ Shows 5 typical stages of population change as countries modernize

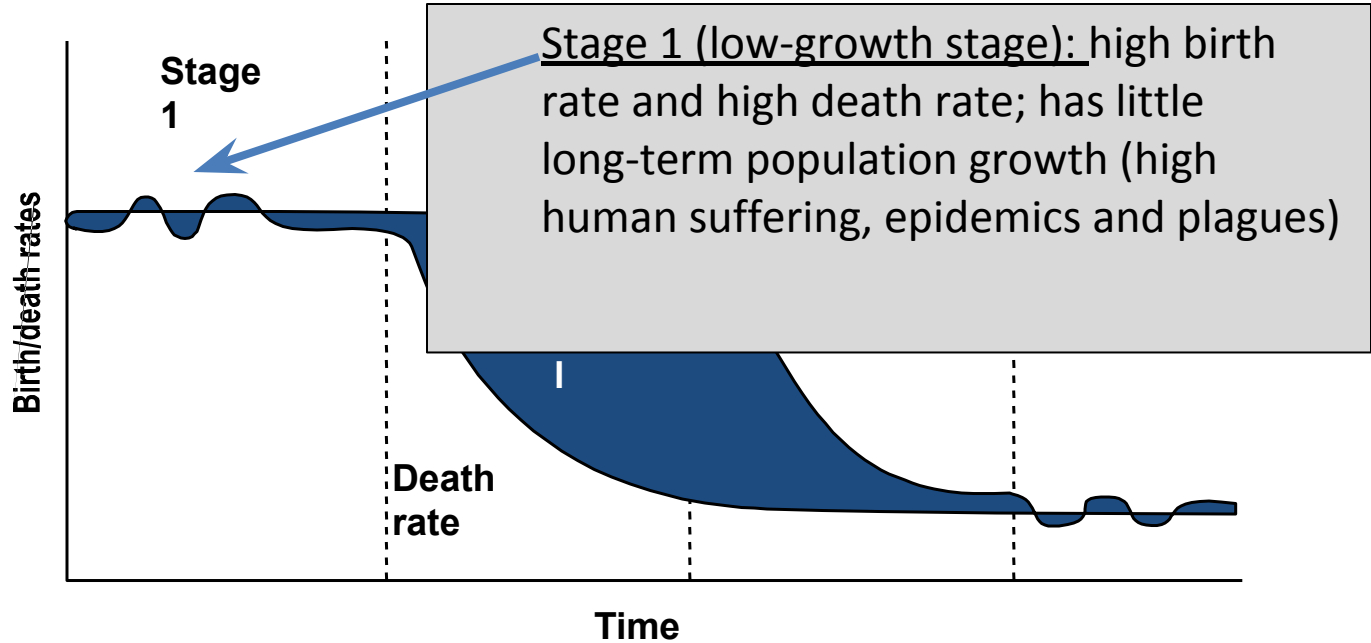


The Classic Stages of Demographic Transition



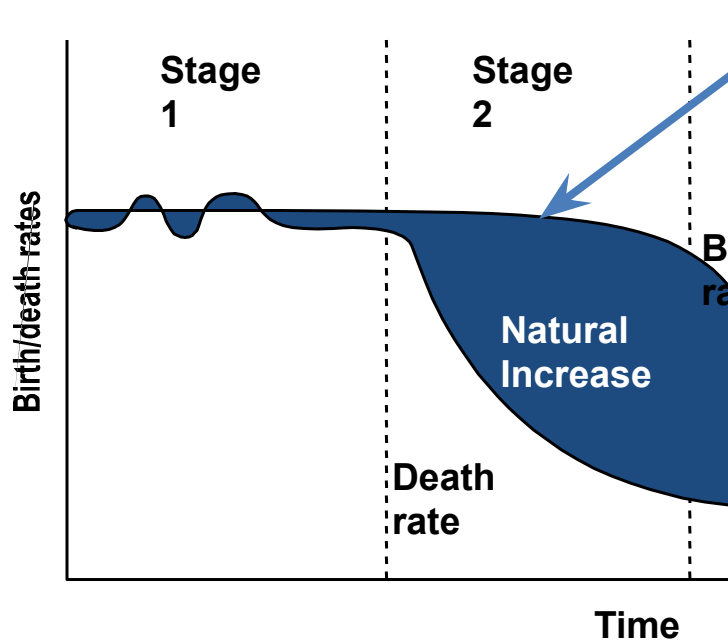
Note: Natural increase is produced from the excess of births over deaths.

The Classic Stages of Demographic Transition



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The Classic Stages of Demographic Transition

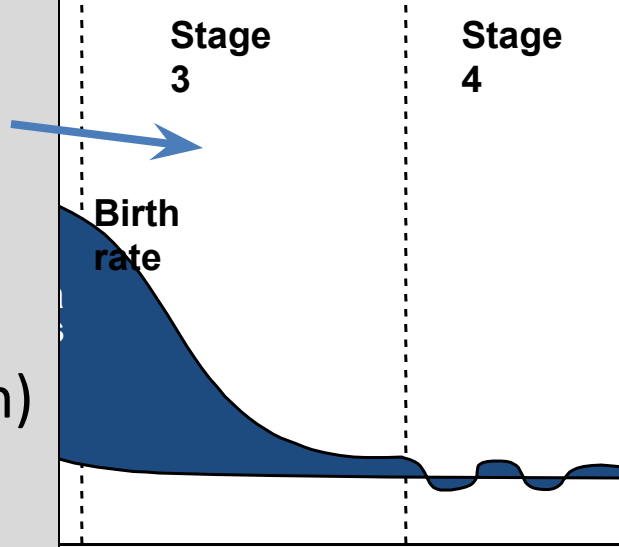


Stage 2 (high-growth stage): high birth rate and declining death rate leads to population increase, they are said to have demographic momentum because of having a large young population that will reproduce (start of Industrial Revolution, agricultural revolution)

Note: Natural increase is produced from the excess of birth

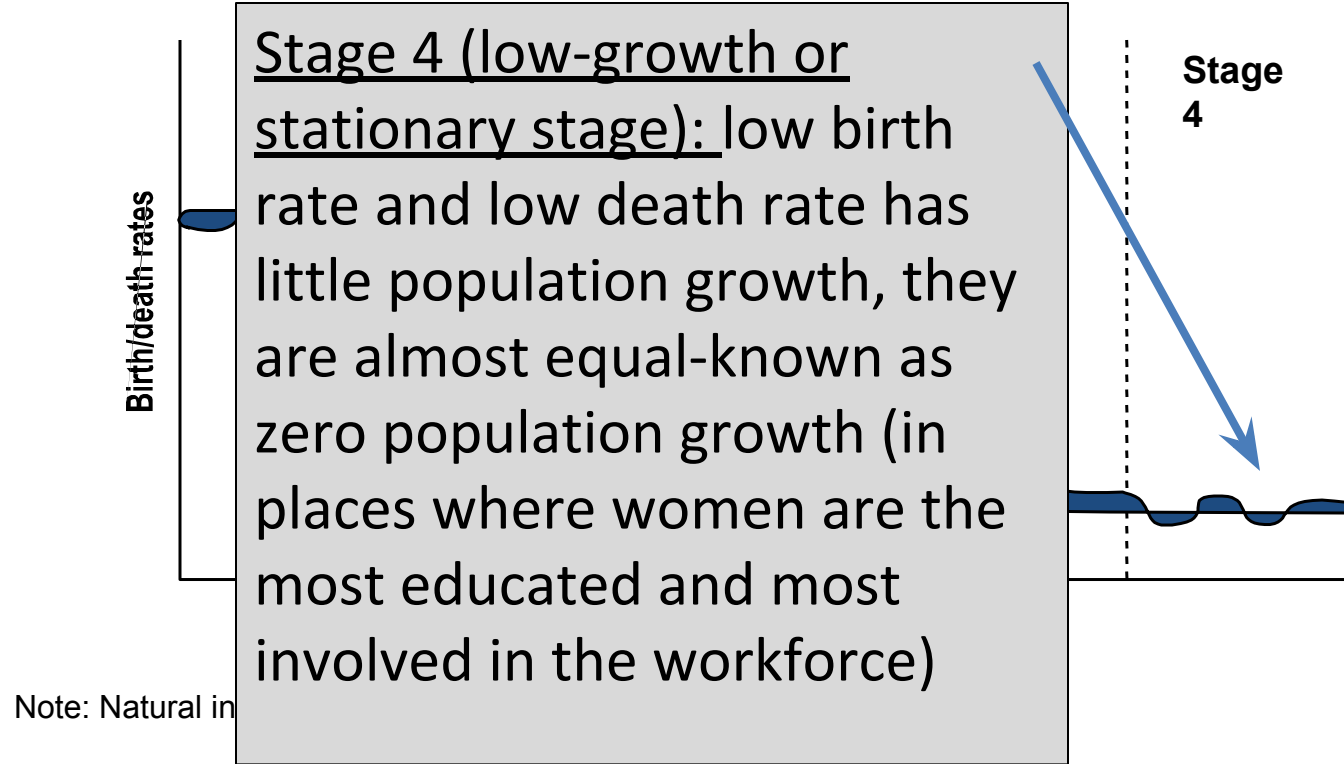
The Classic Stages of Demographic Transition

Stage 3 (moderate-growth stage): declining birth rate with low death rate has steady population growth (people move into cities, greater education and wealth)



births over deaths.

The Classic Stages of Demographic Transition



Demographic Transition



Demographic transition

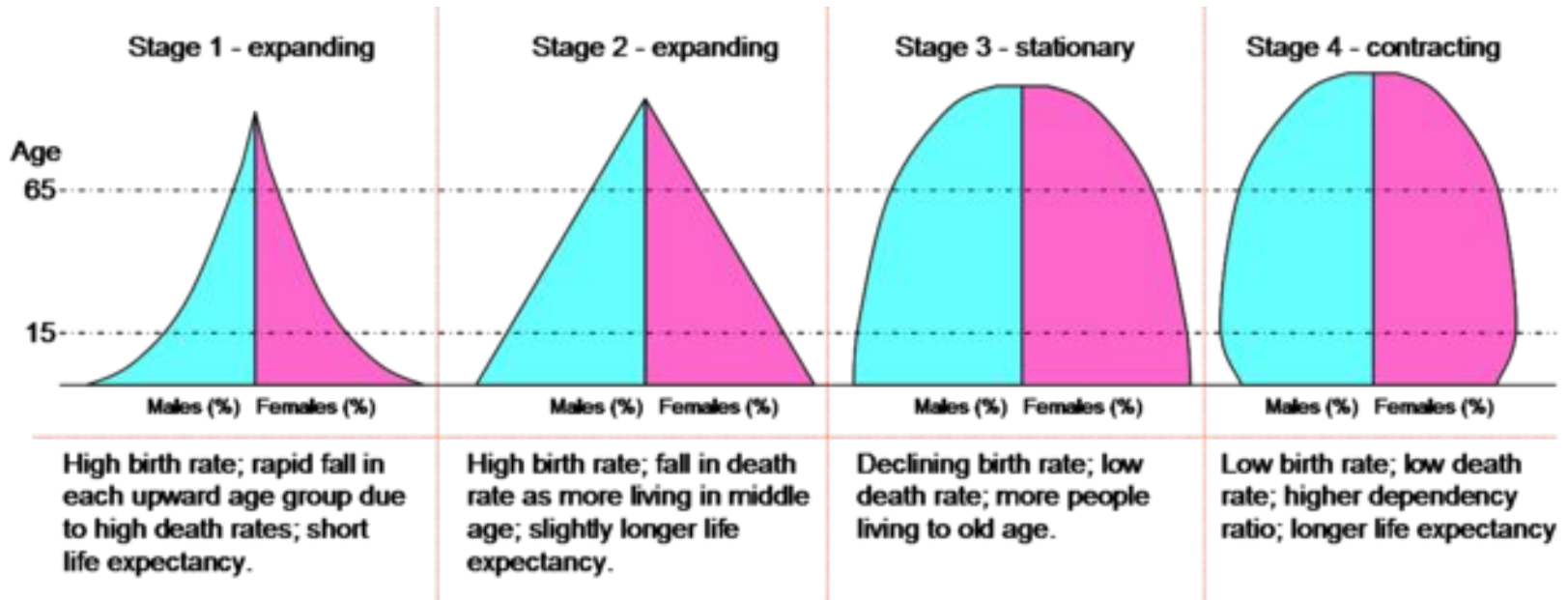
+ ↑ growth rate
$$= \frac{\text{current} - \text{initial}}{\text{initial}} \times 100$$



Khan Academy

Population Pyramids

→ Used to analyze growth (or decline) of fertility, mortality, and migration in certain locations



Government and Population

- **Expansive population policies** encourage reproduction by offering monetary incentives
 - “Year of the Family” in Russia
 - European nations incentivising larger families
- **Eugenic population policies** encourage reproduction that favors one racial or cultural sector over another
- **Restrictive population policies** are what most countries practice today to reduce rate of natural increase
 - China’s one-child-only policy

Population Composition

→ Ethnicity

- ◆ Tend to cluster in particular regions
- ◆ May do so for cultural reasons, discrimination, or housing cost.

→ Age and Sex

- ◆ Some areas may have older or younger average populations
- ◆ Can shape public policy
- ◆ Differences in gender distribution can vary based on wars, migrations, government policy, and economic activity.

→ Dependency Ratio

- ◆ Compares the working to non-working populations
- ◆ Equation: $\text{Under 15} + \text{Over 64} \div \text{Ages 15-64} = \text{DR}$



Migration



Migrations

- The permanent or semipermanent relocation of people from one place to another.
- Voluntary Migration: movement made by choice
 - ◆ Push Pull factors
 - ◆ Factors can be economic, social, political, environmental, or demographic

Ravenstein's Laws of Migration

1. Short Distances

- a. Most migrants only travel short distances
- b. Distance decay (Time-Distance Decay)

2. Urban Areas

- a. Migrants that do travel long distances tend to settle in urban areas
- b. Gravity Model of Migration

3. Multiple Steps

- a. Step Migration: migrants reach their destination through a series of smaller moves

4. Rural to Urban

- a. Most migration in history has followed this law

Ravenstein's Laws of Migration

5. Counter Migration

- a. Each flow produces a movement in the opposite direction
- b. Return Migration: immigrants moving back to their home country

6. Youth

- a. Young adults are more willing to make the move
- b. Usually between 20-45

7. Gender Patterns

- a. Most international migrants are young males
- b. Most internal migrants are young females

Historical Trends of Migration

- The scope of migration greatly increased during the 15th Century
 - ◆ Age of Exploration
- Europe began to dominate the planet
 - ◆ Spread of language, religion, culture, and disease
 - ◆ Columbian Exchange
 - ◆ Trade with Asia



Forced Migration

- **Type of movement where people do not choose to relocate**
 - ◆ Atlantic Slave Trade
 - ◆ Continues today with an estimated 21 million people worldwide
- **Displaced Persons and Refugees**
 - ◆ Result of force migration
 - ◆ Intend to return to their home when it is safe
- **Internally Displaced Persons**
 - ◆ Leave their home, but only move to another part of their own country
- **Refugee**
 - ◆ Cross into another country and have a fear of harm if they were to return to their country.