

Population and Migration

AP Human Geography ■ Unit 2

AP Human Geography



What we will cover

- 1 Distribution & density
- 2 Composition
- 3 Dynamics & the DTM
- 4 Malthus & policies
- 5 Women & aging
- 6 Migration causes
- 7 Migration effects



Distribution and density

- People cluster where climate, water, and soil are favourable.
- **Arithmetic density** = people per land;
physiological density = people per farmland.
- **Carrying capacity** : the population an area's resources can support.



People cluster where resources allow

Uneven distribution has consequences at both ends

crowded regions

strain housing, water, sanitation and services

empty regions

struggle to justify roads, schools and clinics for so few people

why people cluster

low-lying, fertile, temperate and coastal land – around two-thirds of humanity lives within 500 km of a coast

why they do not

deserts, high mountains, dense rainforest and polar regions are all sparsely settled

The physical factors set where settlement is *possible*; economic and political ones decide where it actually happens.

Three density measures, three different questions

arithmetic density

total people $\div$ total land – how crowded, in the plainest sense

physiological density

people $\div$ arable land – pressure on the land that actually feeds them

agricultural density

farmers $\div$ arable land – a *low* value suggests efficient, mechanised farming

distribution vs density

distribution says *where* people are; density says *how crowded* it is there

Egypt has a modest arithmetic density and an enormous physiological one, because almost all of it is desert. That contrast is the standard exam item.

Distribution, density and the rates

Population distribution

Population distribution is *where* people are – clustered on coasts and rivers, sparse in deserts and at altitude.

Population density

Population density is how many per unit area. Arithmetic density divides by all land, physiological density by *arable* land, and agricultural density by farmers.

CDR and TFR

The **crude death rate (CDR)** is deaths per thousand per year; the **total fertility rate (TFR)** is the average number of children per woman over her life.

Growth shape

A population growing by a fixed *number* each year grows **linearly**; one growing by a fixed *percentage* grows **exponentially** – which is why doubling time falls so fast.

Physiological density is the more useful figure for pressure on resources: Egypt's arithmetic density hides that almost everyone lives along one river.

Population composition

- A **population pyramid** shows age and sex structure.
- A wide base = high fertility; a narrow base = low fertility, aging.
- **Dependency ratio** compares dependents to the working-age group.

Reading a population pyramid

what it is

back-to-back bar charts of **age cohorts** , males left and females right

population composition

the make-up of a population by **age** and **sex**

wide base

high **crude birth rate** (CBR) – rapid growth, a young population

narrow base, thick middle

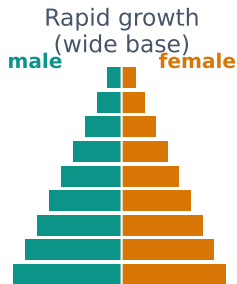
low birth rate, an **aging** population, a shrinking workforce ahead

dependency ratio

the under-15s and over-64s divided by the working-age group

The shape forecasts the next fifty years of schools, jobs and pensions. That is why every population question eventually returns to the pyramid.

A wide base means rapid growth; straight



wide base = high birth rates
 straight sides = slow growth
 narrow base = aging/decline

A wide base means rapid growth; straight sides mean slow growth; a narrow base means decline



Population dynamics

- **CBR** and **CDR** give **RNI** = $(\text{CBR} - \text{CDR}) / 10 \%$.
- **TFR** near 2.1 is replacement level.
- Doubling time $\approx 70 \div \text{RNI}$.



$$\text{RNI} = \text{CBR} - \text{CDR}$$

births in, deaths out; the gap is growth

Worked example – rates to doubling time

Nigeria: CBR = 37, CDR = 12 (per 1000). Find the RNI and the doubling time.

$$\text{RNI} = \frac{37 - 12}{10} = 2.5\% \text{ per year}$$

$$\text{doubling time} \approx \frac{70}{2.5} = 28 \text{ years}$$

Divide by 10: CBR and CDR are per 1000, but RNI is a percent. Skip that step and you report 25% – a century of growth in one year.

The Demographic Transition Model

- Stage 1 high/high; Stage 2 death falls (fast growth); Stage 3 birth falls; Stage 4 low/low; Stage 5 decline.
- The death rate falls before the birth rate.
- Limitation: based on Europe; ignores migration and policy.

The model, and the ageing it ends in

The DTM

The **demographic transition model (DTM)** runs in stages: high birth and death rates, then death rates fall, then birth rates follow, then both are low.

Where growth happens

The gap between the two curves *is* the natural increase – widest in stage 2, closed again in stage 4.

Aging populations

Stage 4 and 5 countries have **aging populations**: a narrow-based pyramid, a rising dependency ratio, and pressure on pensions and healthcare.

Voluntary migration

Voluntary migration is a choice made on push and pull factors; forced migration is not, and the two need different policy answers.

The DTM describes what happened in Europe. Using it as a prediction elsewhere is the standard evaluation point.

The epidemiological transition runs alongside the DTM

what it describes

how the **main causes of death** change as a country moves through the DTM

early stages

infectious disease and famine – plague, cholera, malnutrition

later stages

chronic, degenerative disease – heart disease, cancer, stroke

why the shift

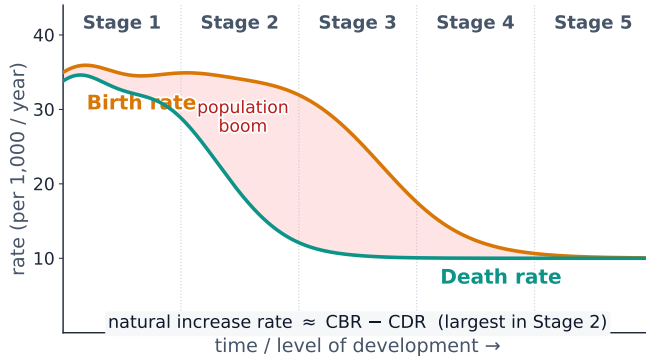
clean water, sanitation, vaccination and better nutrition remove the early killers, so people live long enough to meet the later ones

a possible new stage

the re-emergence of infectious disease through resistance and global travel

The **CDR** falls **before** the **CBR** does. That lag is the gap in the DTM where the population grows fastest.

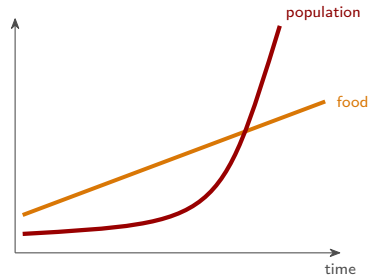
Death rate falls first



Death rate falls first, then birth rate; the gap between them is the population boom

Malthus and population policies

- **Malthus** : population outgrows food – underestimated technology.
- **Pro-natalist** policies encourage births; **anti-natalist** discourage them.
- Strict anti-natalist policy can skew the sex ratio and age the population.



*population (exponential) outgrows food
(linear)*

Malthus, his critics, and the two kinds of policy

Malthus

population grows **geometrically**, food only **arithmetically**, so famine must follow

the critics

he underestimated **technology** – the Green Revolution and modern farming raised output enormously

neo-Malthusians

update the argument to all resources, not just food: water, soil, energy, climate

pro-natalist

encourage births – cash bonuses, parental leave, childcare (France, Japan)

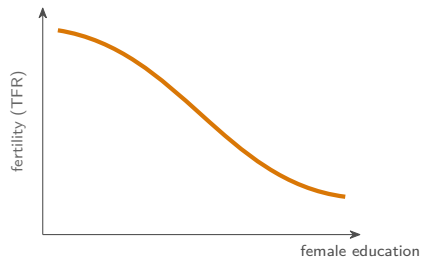
anti-natalist

discourage them – China's one-child policy, family-planning campaigns

Policies have **unintended consequences**: a strong anti-natal policy can skew the sex ratio and speed up aging, which then needs a pro-natal answer a generation later.

Women and aging

- Female education and employment lower fertility.
- Aging (low fertility + long life) raises the **elderly dependency ratio**.
- Responses: raise retirement age, encourage immigration.



more education, fewer children



Causes of migration

- **Push factors** drive people away; **pull factors** attract them.
- **Intervening obstacles** block a move; **intervening opportunities** divert it.
- **Forced** migration gives no choice; **voluntary** is chosen.



Push, pull, and the choice to move

The vocabulary every migration question uses

push and pull

push factors drive people out (conflict, drought, no work);
pull factors draw them in (jobs, safety, family)

international vs internal

between countries, or within one – most often rural-to-urban

voluntary vs forced

a choice, or none: refugees, asylum seekers, internally displaced people

Ravenstein's laws

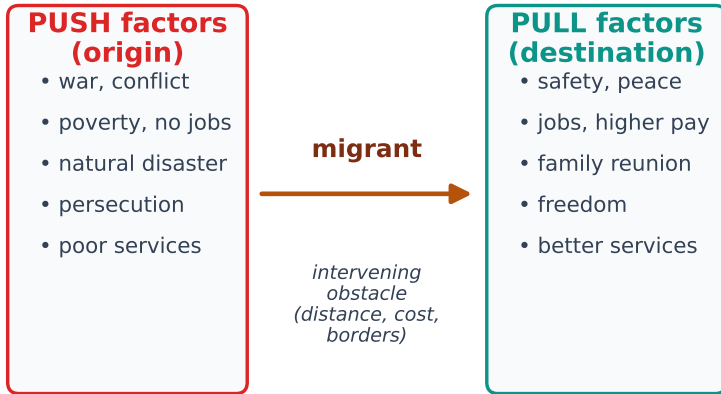
most migrants move **short distances**, in **steps**, and are drawn mainly by **economic pull**

intervening obstacle

anything that blocks the move – a border, a mountain range, the cost of the journey

Naming the type before you explain it is what earns the mark. “Forced international migration” says more in three words than a paragraph of description.

Causes and Types of Migration



AP HuG · U2 · migration push and pull factors

Migration decisions weigh push factors against pull factors, across an intervening obstacle

Effects of migration

- **Remittances** raise income in the origin country.
- **Brain drain** : loss of skilled workers weakens the origin.
- Origin ages; destination gains young workers.



Migration reshapes origin and destination

Migration changes both ends, in opposite ways

the destination

gains workers and cultural diversity; may face pressure on housing and services, and social tension

the origin

may lose skilled workers – a **brain drain** – but gains **remittances**, money sent home, a major income source for many countries

both structures shift

migrants are usually **young working-age adults**, so the origin ages and the destination's pyramid bulges in the middle

and the sex ratio

where migration is male-dominated, both places are left unbalanced

Answer effects in **pairs**, origin and destination, and say who gains and who loses at each. A one-sided answer caps the mark.

Key points

The **DTM** tracks
births/deaths across five stages

TFR 2.1 = replacement;
below it, population falls

Migration = **push** +
pull, forced or voluntary

Migration brings **remit-
tances** but **brain drain**

Worked example – the command word is the question

“Explain ONE reason why the rate of natural increase (RNI) in urban areas may vary significantly from RNI in rural areas in the same country.” (real AP question)

“In cities the cost of living – housing, schooling, childcare – is higher, so urban families tend to have fewer children. Fewer births lower the crude birth rate, so the urban RNI falls below the rural RNI, where children still help with farm work.”

Explain wants a **cause-and-effect chain**: name the reason **and follow it all the way to the RNI**. A bare fact – “cities are expensive” – earns **zero**.

Exam tips

- Compute **RNI** = $(\text{CBR} - \text{CDR}) \div 10$ as a percent, and read doubling time as about $70 \div \text{RNI}$.
- Link a **population pyramid's** shape to fertility and the **DTM** stage – a wide base means Stage 2.
- Remember the **death rate** falls before the **birth rate**; that is why Stage 2 grows fastest.
- Separate **push** from **pull** and **forced** from **voluntary**; a **refugee** crosses a border, an **IDP** does not.
- Weigh migration effects: **remittances** help the origin, but **brain drain** and aging hurt it.



Unit 2 – key takeaways

1

RNI

$(\text{CBR} - \text{CDR}) \div 10$; doubling $\approx$
 $70 \div \text{RNI}$

2

Pyramid

wide base $\Rightarrow$ Stage 2; death rate
falls first

3

Migration

push/pull; forced/voluntary;
refugee vs IDP

4

Effects

remittances help origin; brain
drain and aging hurt

Check yourself

- 1 In which DTM stage does the death rate fall while births stay high?
- 2 What did Malthus predict, and why was he wrong?
- 3 A wide pyramid base means what?
- 4 Push or pull: a famine at home?

Answers 1. stage 2 – so population grows fastest 2. food would outrun supply; technology raised yields 3. high birth rate, a young population 4. push