

UPR210

URBANISATION AND POPULATION STUDIES



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Course code: URP 210

Course title: Urbanisation and Population Studies

Course credit load: 2 Units

List of Series:

Series 1: World Population Growth and Demographic Characteristics

Series 2: Population Composition, Movements and Trends

Series 3: Methods of Population Estimation and Forecasting

Series 4: Urbanisation Processes and City Development in Africa

Series 5: Urbanisation and African Economic Development

1 World Population Growth and Demographic Characteristics

Series outline

Part 1 (1.1): Concepts and Scope of Population Studies

Sub-Part 1.1.1: Definition and scope of population studies

Sub-Part 1.1.2: Relationship between population studies and urban planning

Sub-Part 1.1.3: Key demographic concepts and terminology

Part 2 (1.2): World Population Growth History and Trends

Sub-Part 1.2.1: Historical overview of world population growth

Sub-Part 1.2.2: Stages of the demographic transition model

Sub-Part 1.2.3: Current and projected global population trends

Part 3 (1.3): Demographic Characteristics Fertility and Mortality

Sub-Part 1.3.1: Concepts and measures of fertility

Sub-Part 1.3.2: Concepts and measures of mortality

Sub-Part 1.3.3: Natural increase and its planning implications

Part 4 (1.4): Population Distribution and Density

Sub-Part 1.4.1: Patterns of world population distribution

Sub-Part 1.4.2: Population density concepts and measurement

Sub-Part 1.4.3: Factors influencing population distribution

Introduction

Population is the foundation of all planning. The size, growth, composition, and distribution of a population determine the demand for housing, services, infrastructure, and land. A planner who does not understand how populations grow, where they are concentrated, and why they move is ill-equipped to anticipate needs, allocate resources, or design cities that serve their inhabitants well. Population studies therefore form an indispensable part of the urban and regional planner's knowledge base.



The aim of this Series is to equip you with the knowledge and skills to define key demographic concepts, describe patterns and trends in world population growth, explain the characteristics of fertility and mortality, and analyse the distribution and density of the world's population.

We shall commence this Series by introducing the scope and key concepts of population studies and their relevance to planning. Next, we will trace the history of world population growth and examine the demographic transition model. Following that, we will explore the demographic characteristics of fertility and mortality and their planning implications. Finally, we will wrap up by examining the patterns, measurement, and determinants of population distribution and density across the globe.

Series Learning Outcomes

Upon completing this Series, you should be able to:

SLO 1.1 define population studies and explain its key concepts and relevance to planning,

SLO 1.2 describe the history of world population growth and the stages of the demographic transition model,

SLO 1.3 explain the concepts and measures of fertility, mortality, and natural increase,

SLO 1.4 analyse the patterns, measurement, and determinants of world population distribution and density.

1.1 Concepts and Scope of Population Studies

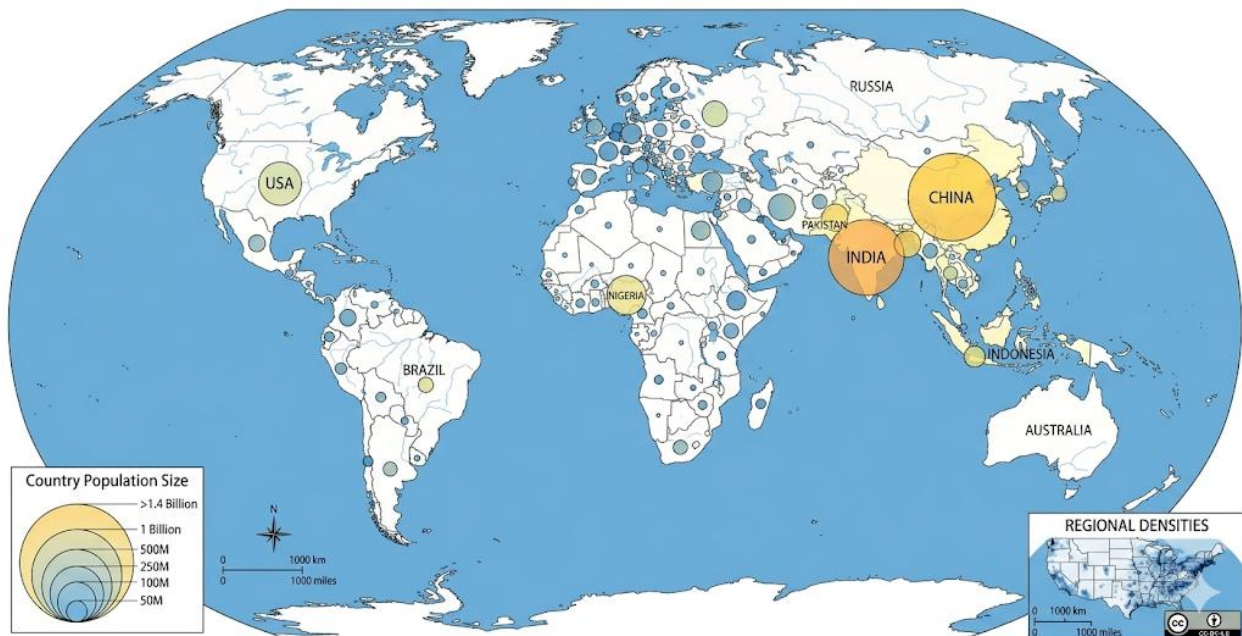
1.1.1 Definition and scope of population studies

Population studies, also referred to as **demography**, is the scientific study of human populations, including their size, composition, distribution, and change over time. It examines the processes that drive population change—births, deaths, and migration—and analyses their causes and consequences for society, the economy, and the environment. The scope of population studies is broad, encompassing both formal demography, which focuses on statistical measurement, and social demography, which examines the social and economic factors that shape population behaviour. For planners, population studies provides the quantitative and analytical foundation for forecasting future demand and designing responsive environments.

Fill in the blank: Demography examines the processes that drive population change, namely births, deaths, and _____.



GLOBAL POPULATION DISTRIBUTION BY COUNTRY



Short description: Image of a world population map showing population size by country or region using shading or proportional symbols.

Plate 1.1 World population distribution by country

1.1.2 Relationship between population studies and urban planning

Urban and regional planning is fundamentally concerned with the organisation of space to meet human needs. The scale of those needs for housing, schools, hospitals, roads, water, and sanitation is directly determined by population size and growth. **Population projections** form the basis of master plans, structure plans, and infrastructure programmes. Understanding **demographic trends** such as ageing, urbanisation, and household size changes enables planners to anticipate shifts in demand and design flexible, future-proof solutions. Without a sound demographic foundation, planning decisions risk being either wasteful or inadequate.

Fill in the blank: Population projections form the basis of master plans, structure plans, and infrastructure _____.

1.1.3 Key demographic concepts and terminology

Several key terms underpin the study of population. **Population size** refers to the total number of people in a defined area at a given time. **Population growth rate** measures the rate at which a population is increasing or decreasing as a percentage per year. **Birth rate** (or crude birth rate) is the number of live births per 1,000 people per year. **Death rate** (or crude death rate) is the number of deaths per 1,000 people per year. **Natural increase** is the difference between the birth rate and the death rate. **Net migration** is the difference between the number of people entering and leaving a place. Together, these measures describe and explain population change.

Fill in the blank: Natural increase is the difference between the birth rate and the _____ rate.



Pilot questions 1.1

Which of the following best defines demography?

Which of the following is not a driver of population change?

What is the crude birth rate?

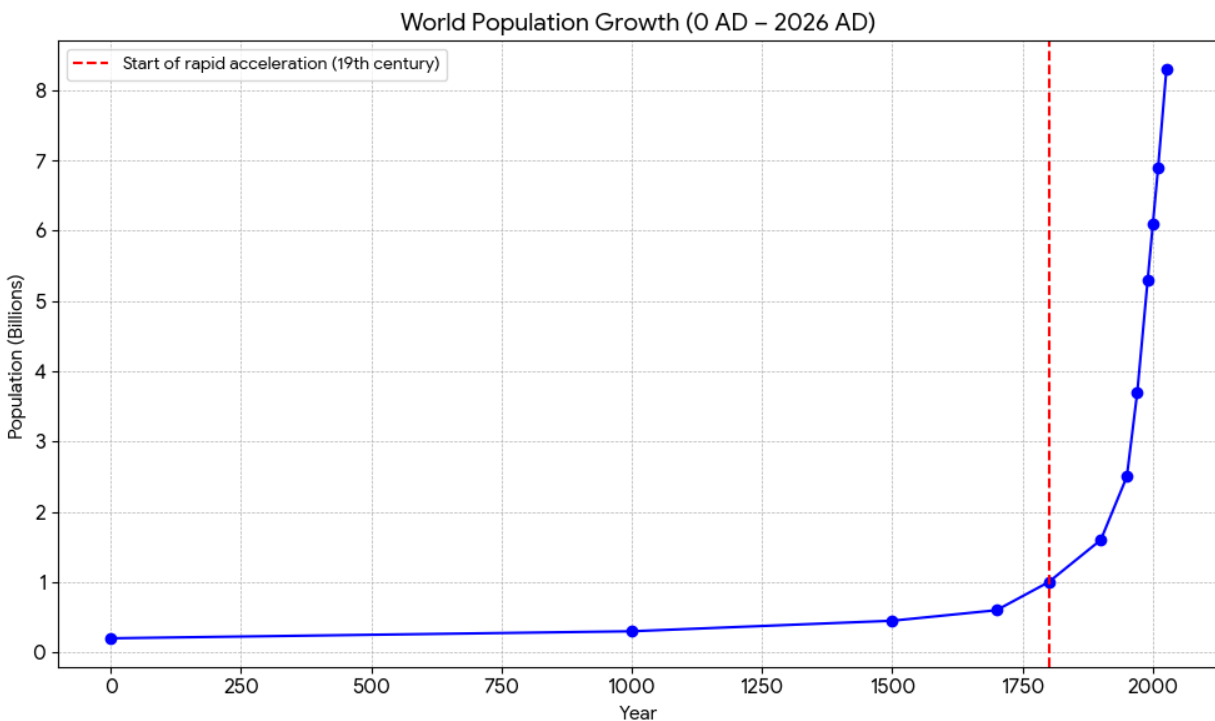
Fill in the blank: Population projections enable planners to anticipate shifts in _____ for services and infrastructure.

1.2 World Population Growth History and Trends

1.2.1 Historical overview of world population growth

For most of human history, world population grew very slowly. It is estimated that the global population reached its first billion around 1800, having taken hundreds of thousands of years to reach that milestone. Thereafter, growth accelerated dramatically: the second billion was added by 1930, the third by 1960, and subsequent billions at progressively shorter intervals. By 2023, the world population had surpassed eight billion. This acceleration is primarily attributed to improvements in **public health, nutrition, sanitation, and medical technology**, which dramatically reduced death rates without an immediate corresponding fall in birth rates.

Fill in the blank: World population growth accelerated primarily due to improvements in public health, nutrition, sanitation, and medical _____.



Short description: Line graph showing world population growth from prehistoric times to the present, illustrating the rapid acceleration from the industrial revolution onwards.

Figure 1.1 World population growth over time



1.2.2 Stages of the demographic transition model

The **demographic transition model** (DTM) describes the historical shift in populations from high birth and death rates to low birth and death rates as countries undergo economic and social development. The model comprises four stages. In **Stage 1**, both birth and death rates are high and population is stable. In **Stage 2**, death rates fall while birth rates remain high, causing rapid population growth. In **Stage 3**, birth rates begin to fall as societies modernise, slowing growth. In **Stage 4**, both rates are low and population stabilises. Some scholars add a **Stage 5** in which death rates exceed birth rates, causing population decline, as observed in some European countries.

Fill in the blank: In Stage 2 of the demographic transition model, death rates fall while birth rates remain _____, causing rapid population growth.

1.2.3 Current and projected global population trends

Global population growth is projected to continue, though at a slowing rate. The United Nations projects that world population may reach approximately 9.7 billion by 2050 and could peak at around 10.4 billion in the 2080s before stabilising or declining. Growth is increasingly concentrated in sub-Saharan Africa, which is expected to account for more than half of global population increase through 2050. Meanwhile, many high-income countries face **population ageing** and **natural decrease**. These diverging trends have profound implications for planning, development policy, and global resource allocation.

Fill in the blank: Sub-Saharan Africa is expected to account for more than half of global population _____ through 2050.

Pilot questions 1.2

When did world population reach its first billion?

Which factor most contributed to accelerating world population growth from the 19th century?

Fill in the blank: In Stage 3 of the demographic transition model, _____ rates begin to fall as societies modernise.

Which region is expected to contribute most to global population growth through 2050?

Which of the following describes Stage 4 of the demographic transition model?

1.3 Demographic Characteristics Fertility and Mortality

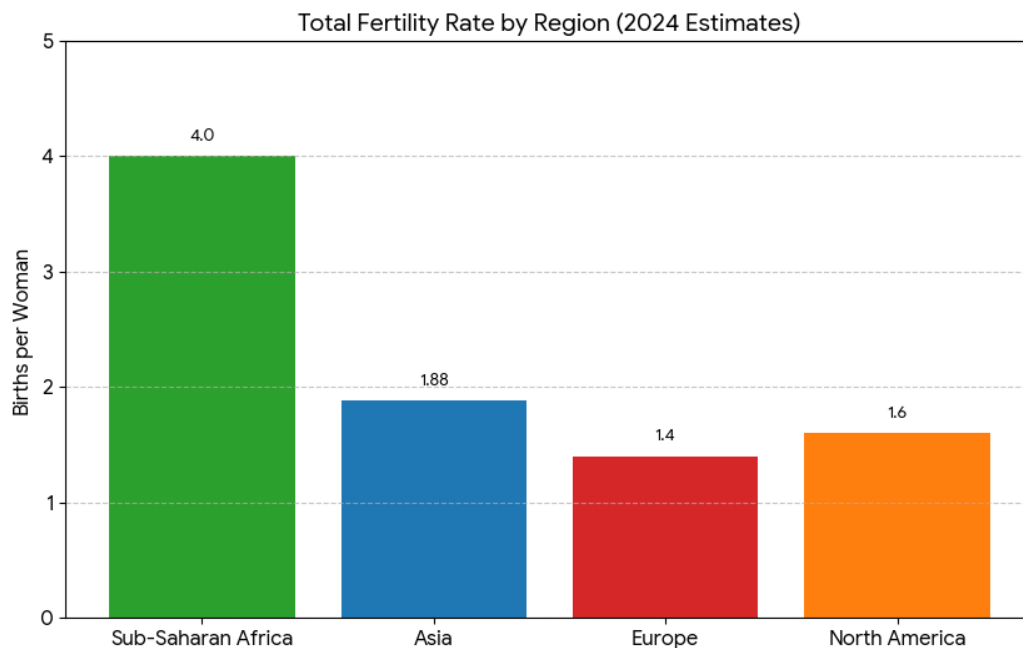
1.3.1 Concepts and measures of fertility

Fertility refers to the actual reproductive performance of a population the number of live births that occur. It is distinct from **fecundity**, which refers to the biological capacity to reproduce. The most commonly used measure is the **crude birth rate** (CBR), expressed as the number of live births per 1,000 people per year. A more refined measure is the **total fertility rate** (TFR), which represents the average number of children a woman would have over her lifetime if current age-



specific fertility rates remained constant. A TFR of approximately 2.1 is considered the **replacement level** the rate at which a population replaces itself without migration.

Fill in the blank: A total fertility rate of approximately 2.1 is considered the _____ level at which a population replaces itself.



Short description: Bar chart comparing total fertility rates across world regions including sub-Saharan Africa, South Asia, Europe, and North America.

Figure 1.2 Total fertility rates by world region

1.3.2 Concepts and measures of mortality

Mortality refers to the incidence of death in a population. The **crude death rate (CDR)** measures the number of deaths per 1,000 people per year and is the most basic mortality indicator. The **infant mortality rate (IMR)** measures the number of deaths of children under one year of age per 1,000 live births and is widely used as an indicator of public health and development. **Life expectancy at birth** is the average number of years a newborn is expected to live given current mortality conditions. High life expectancy and low infant mortality are associated with advanced healthcare systems, adequate nutrition, and high living standards.

Fill in the blank: The infant mortality rate measures deaths of children under one year of age per 1,000 _____ births.

1.3.3 Natural increase and its planning implications

Natural increase is the surplus of births over deaths in a given period and is the primary driver of population growth in most developing countries. It is calculated as the crude birth rate minus the crude death rate, expressed per 1,000 persons per year. High rates of natural increase place



pressure on educational facilities, healthcare systems, housing supply, and urban infrastructure. For planners, understanding the rate of natural increase helps to project future population size and to anticipate the scale and timing of infrastructure investments required to meet demand.

Fill in the blank: Natural increase is calculated as the crude birth rate minus the crude _____ rate.

KEY FERTILITY AND MORTALITY MEASURES IN POPULATION STUDIES

1. CRUDE BIRTH RATE (CBR)

- Number of live births per 1,000 people per year
- Simple measure of population reproduction

2. TOTAL FERTILITY RATE (TFR)

- Average number of children a woman is have in hers lifetime
- More refined measure of family size and population growth potential

3. CRUDE DEATH RATE (CDR)

- Number of deaths per 1,000 pear population motrality

4. INFANT MORTALITY RATE IMR)

- Number of deaths of infants under 1 yer age 1,000 live births
- Key indicator of population health and living standards

Box 1.1 Key fertility and mortality measures used in population studies

Short description: A box summarising definitions and formulae for crude birth rate, total fertility rate, crude death rate, infant mortality rate, and natural increase.

Pilot questions 1.3



Define fertility and distinguish it from fecundity.

What does the total fertility rate measure?

What is the infant mortality rate and why is it significant?

Explain how natural increase is calculated and why it matters for planning.

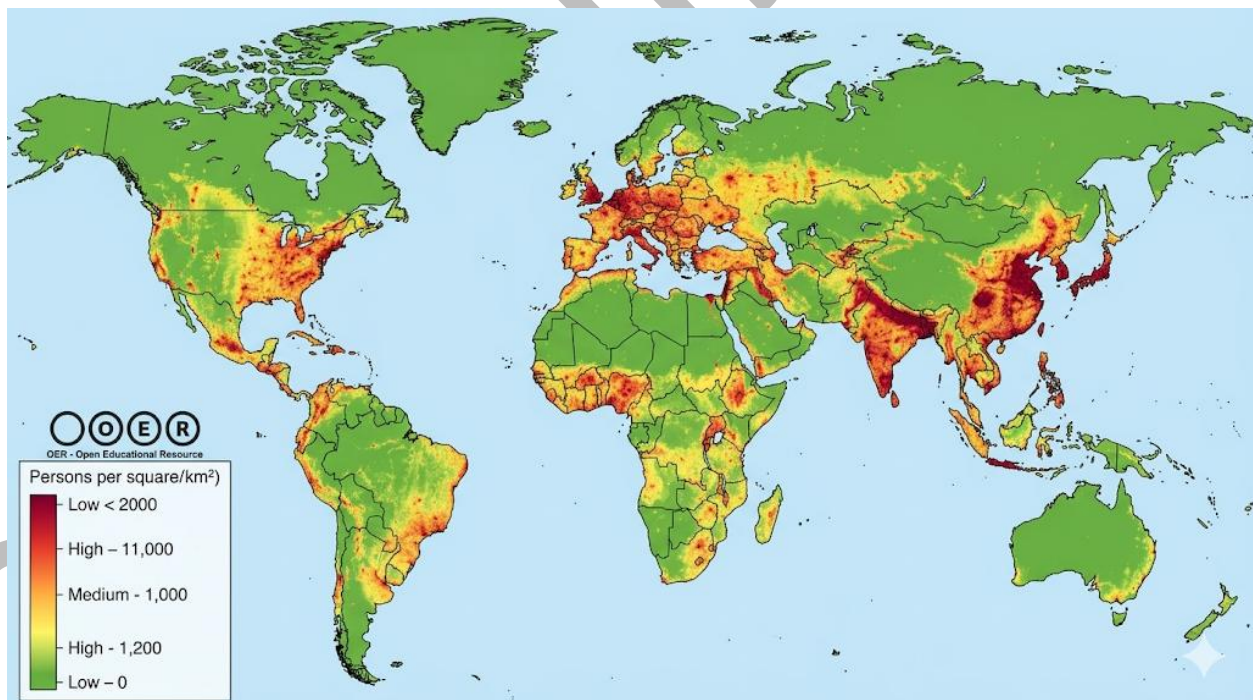
Fill in the blank: Life expectancy at birth is the average number of years a _____ is expected to live given current mortality conditions.

1.4 Population Distribution and Density

1.4.1 Patterns of world population distribution

Population distribution describes how people are spread across the surface of the earth. The world's population is distributed very unevenly: roughly 90% of people live in the northern hemisphere, and the most densely settled regions include East Asia, South Asia, Western Europe, and the northeastern United States. Large areas of the earth including deserts, polar regions, dense rainforests, and high mountain zones are sparsely populated or uninhabited. In Africa, population is concentrated in the Nile Valley, the West African coast, the East African highlands, and parts of southern Africa.

Fill in the blank: Roughly _____ percent of the world's population lives in the northern hemisphere.



Short description: Image of a world population density map showing dense and sparse areas using a colour gradient.

Plate 1.2 World population density map



1.4.2 Population density concepts and measurement

Population density is the number of people per unit area, most commonly expressed as persons per square kilometre. **Arithmetic density** divides the total population by the total land area and gives a simple measure of overall concentration. **Physiological density** divides the population by the area of arable land, providing a more meaningful measure of pressure on productive land.

Agricultural density relates the farming population to the area of cultivated land. Each measure reveals a different dimension of the relationship between people and the land they occupy, and each has specific applications in planning and resource management.

Fill in the blank: Physiological density divides the population by the area of _____ land, showing pressure on productive resources.

1.4.3 Factors influencing population distribution

The uneven distribution of world population reflects the influence of both physical and human factors. **Physical factors** include climate, relief, soils, water supply, and natural resources. Areas with favourable conditions attract settlement, while harsh environments repel it. **Human factors** include historical patterns of settlement, economic opportunities, political stability, infrastructure provision, and cultural ties. In developing countries, colonial history has strongly shaped population distribution, concentrating people around former administrative centres, ports, and resource extraction zones. These inherited patterns continue to influence urbanisation and regional development today.

Fill in the blank: In developing countries, _____ history has strongly shaped population distribution around former administrative centres and ports.

Pilot questions 1.4

Define population distribution and describe one global pattern.

What is arithmetic density and how is it calculated?

Distinguish between arithmetic density and physiological density.

Identify two physical factors that influence where people settle.

Fill in the blank: Colonial history has shaped population distribution around former _____ centres, ports, and resource zones.

Series Summary

This Series has introduced you to the foundational concepts of population studies and their relevance to urban and regional planning. We began by defining demography and its scope, tracing its connection to planning practice, and establishing the key measures of population change.

We then examined the history of world population growth and the demographic transition model, before exploring the demographic characteristics of fertility and mortality, including total fertility rate, infant mortality, and natural increase. Finally, we analysed the patterns, measurement, and determinants of world population distribution and density, including the physical and human factors that explain why people are concentrated in some parts of the world.



and absent from others. By engaging with these topics, you should now be able to define population studies, describe global growth trends, explain fertility and mortality measures, and analyse population distribution and density, as outlined in the Series Learning Outcomes.

Glossary of Terms

Agricultural density: The ratio of the farming population to the area of cultivated land in a given region.

Arithmetic density: Total population divided by total land area, expressed as persons per square kilometre.

Birth rate (crude birth rate): The number of live births per 1,000 people in a population per year.

Death rate (crude death rate): The number of deaths per 1,000 people in a population per year.

Demographic transition model: A model describing the historical shift from high birth and death rates to low birth and death rates as countries develop.

Demography: The scientific study of human populations, including their size, composition, distribution, and change over time.

Fecundity: The biological capacity of an individual or population to reproduce.

Fertility: The actual reproductive performance of a population, measured by the number of live births that occur.

Infant mortality rate: The number of deaths of children under one year of age per 1,000 live births.

Life expectancy: The average number of years a newborn is expected to live given current mortality conditions.

Natural increase: The surplus of births over deaths in a population, calculated as the crude birth rate minus the crude death rate.

Net migration: The difference between the number of people entering and leaving a place in a given period.

Physiological density: Total population divided by the area of arable land, indicating pressure on productive resources.

Population density: The number of people per unit area of land, most commonly expressed as persons per square kilometre.

Population distribution: The pattern of how people are spread across a geographic area.

Population growth rate: The rate at which a population increases or decreases, expressed as a percentage per year.

Replacement level: A total fertility rate of approximately 2.1, at which a population replaces itself over generations without net migration.

Total fertility rate: The average number of children a woman would have over her lifetime if current age-specific fertility rates remained constant.



Concept Check Questions 1

Objective questions

Define demography. (Linked to SLO 1.1)

Identify the three drivers of population change. (Linked to SLO 1.1)

Fill in the blank: In Stage 2 of the demographic transition model, death rates fall while birth rates remain _____. (Linked to SLO 1.2)

State the replacement level total fertility rate. (Linked to SLO 1.3)

Short-answer questions

5. Explain why population studies is important for urban and regional planning. (Linked to SLO 1.1)

6. Describe the four main stages of the demographic transition model. (Linked to SLO 1.2)

7. Distinguish between the crude birth rate and the total fertility rate. (Linked to SLO 1.3)

8. Explain how physical factors influence the distribution of world population. (Linked to SLO 1.4)

Long-answer questions

9. Analyse how trends in fertility and mortality have shaped world population growth since the nineteenth century. (Linked to SLO 1.2, 1.3)

10. Evaluate the concept of population density, comparing arithmetic, physiological, and agricultural density and explaining their respective planning applications. (Linked to SLO 1.4)

Answers to Concept Check Questions 1

Objective questions

Demography is the scientific study of human populations, including their size, composition, distribution, and change over time.

Births, deaths, and migration.

High.

Approximately 2.1.

Short-answer questions

5. Population studies is important for planning because the size, growth, and composition of a population determine the demand for housing, services, infrastructure, and land. Without demographic data and projections, planners cannot accurately forecast needs or design appropriately scaled solutions.

6. Stage 1: high birth and death rates, stable population. Stage 2: death rates fall, birth rates remain high, rapid growth. Stage 3: birth rates begin to fall, growth slows. Stage 4: both rates are low, population stabilises.

7. The crude birth rate measures live births per 1,000 people per year and is a simple but imprecise measure because it is affected by age structure. The total fertility rate measures the



average number of children a woman would have over her lifetime and is a more precise indicator of fertility behaviour independent of age composition.

8. Physical factors such as climate, relief, soil quality, and water supply determine the habitability and productive capacity of land. Favourable conditions attract settlement; harsh environments such as deserts, polar regions, and high mountains repel it, producing the uneven global distribution observed today.

Long-answer questions

9. *Basic response:* Improvements in medicine and sanitation reduced death rates from the 18th century while birth rates remained high, producing rapid natural increase. As development progressed, birth rates fell, slowing growth.

Value-added response: Outstanding learners may trace how these changes unfolded differently across regions, applying the demographic transition model to explain why sub-Saharan Africa remains in Stage 2 or early Stage 3 while Europe has moved into Stage 4 or 5, and may discuss the planning implications of these divergent trajectories.

10. *Basic response:* Arithmetic density gives a general overview; physiological density shows pressure on productive land; agricultural density relates to farming populations. Each is useful for different planning purposes.

Value-added response: Outstanding learners may evaluate how these measures can be misleading in isolation for example, how a country with low arithmetic density may have very high physiological density if most of its land is desert and may discuss how planners use multiple density measures together to build a more accurate picture of population pressure and service needs.

Answers to Pilot Questions 1

Part 1.1

The scientific study of human populations including their size, composition, distribution, and change

Climate change

The number of live births per 1,000 people per year

Demand

Part 1.2

Around 1800

Reductions in death rates through improvements in public health and medical technology

Birth

Sub-Saharan Africa

Both birth and death rates are low and population is stable

Part 1.3

Fertility is actual reproductive performance measured by live births; fecundity is the biological capacity to reproduce



The average number of children a woman would have over her lifetime if current age-specific fertility rates remained constant

Deaths of children under one year per 1,000 live births; it is significant as an indicator of public health and development levels

Natural increase equals crude birth rate minus crude death rate; it helps planners project population size and plan infrastructure investment

Newborn

Part 1.4

Population distribution is how people are spread across the earth; most people are concentrated in East Asia, South Asia, and Western Europe

Total population divided by total land area, expressed as persons per square kilometre

Arithmetic density uses total land area; physiological density uses only arable land, giving a better indication of pressure on productive resources

Climate and relief

Administrative

References and Attributions 1

Course content references

Bogue, D. J. (1969). *Principles of Demography*. New York: Wiley.

Haub, C., & Kaneda, T. (2023). *World Population Data Sheet*. Washington, DC: Population Reference Bureau.

United Nations, Department of Economic and Social Affairs, Population Division (2022). *World Population Prospects 2022: Summary of Results*. New York: United Nations.

Illustrations

Plate 1.1 World population distribution by country

AI-generated suggestion: "Generate a world map showing population size by country using proportional shading or circles to represent population concentrations."

Suggested OER search string: "world population distribution map OER."

Figure 1.1 World population growth over time

AI-generated suggestion: "Generate a line graph showing world population growth from year zero to the present, illustrating the acceleration of growth from the 19th century."

Suggested OER search string: "world population growth history line graph OER."

Figure 1.2 Total fertility rates by world region

AI-generated suggestion: "Generate a bar chart comparing total fertility rates across world regions including sub-Saharan Africa, South Asia, Europe, and North America."

Suggested OER search string: "total fertility rate world regions bar chart OER."

Box 1.1 Key fertility and mortality measures used in population studies



AI-generated suggestion: "Generate a text box summarising key fertility and mortality measures used in population studies including crude birth rate, total fertility rate, crude death rate, and infant mortality rate."

Suggested OER search string: "fertility mortality measures population studies summary OER."

Plate 1.2 World population density map

AI-generated suggestion: "Generate a world population density map using a colour gradient showing areas of high and low population concentration."

Suggested OER search string: "world population density map OER."

Attributions

All AI prompts are intended for use with generative tools to create original illustrations. Suggested search strings are provided to locate open educational resources (OER) for non-commercial academic use.

Course code: URP 210

Course title: Urbanisation and Population Studies

Course Unit: 2 Units

Series 1: World Population Growth and Distribution
Series 2: Demographic and Cultural Characteristics of Population
Series 3: Population Composition, Movements, and Trends
Series 4: Methods of Population Estimation and Forecasting
Series 5: Urbanisation and African Economic Development

Here is the proposed outline for Series 2:

Part 2.1 Demographic characteristics of population

- Age structure and its implications
- Sex composition and gender balance
- Household size and family structures

Part 2.2 Cultural characteristics of population

- Language and communication patterns
- Religion and belief systems
- Traditions, customs, and social norms

Part 2.3 Interactions between demographic and cultural factors



Influence of culture on fertility and mortality
Impact of demographic change on cultural practices
Migration and cultural diversity

Part 2.4 Implications for planning and development

Role of demographic and cultural data in policy-making
Challenges of cultural diversity in urbanisation
Strategies for inclusive development

Introduction

In the last Series, we explored world population growth and distribution, examining how demographic transitions and spatial patterns shape societies. Building on that foundation, this Series turns our attention to the **demographic and cultural characteristics of population**, which are equally vital in understanding how communities function and develop. These characteristics influence social organisation, economic productivity, and the cultural identity of regions, making them central to the study of urbanisation and population studies.

The aim of this Series is to equip you with the ability to analyse demographic structures and cultural attributes of populations, and to evaluate how these factors interact to influence planning and development.

We shall commence this Series by studying demographic characteristics such as age structure, sex composition, and household patterns. Next, we will explore cultural characteristics, including language, religion, and traditions. Following that, we will examine the interactions between demographic and cultural factors, focusing on how culture influences fertility and mortality, and how demographic change reshapes cultural practices. Finally, we will wrap up by considering the implications of these demographic and cultural features for planning and development, highlighting strategies for inclusive growth in diverse societies.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- SLO 2.1** describe demographic characteristics such as age structure, sex composition, and household patterns,
- SLO 2.2** explain cultural characteristics of populations, including language, religion, and traditions,
- SLO 2.3** analyse the influence of cultural factors on fertility and mortality,
- SLO 2.4** evaluate the impact of demographic change on cultural practices,
- SLO 2.5** examine how migration contributes to cultural diversity,



SLO 2.6 apply demographic and cultural data in policy-making and planning,
SLO 2.7 assess the challenges posed by cultural diversity in urbanisation, and
SLO 2.8 propose strategies for inclusive development that integrate demographic and cultural considerations.

2.1 Demographic Characteristics of Population

Demographic characteristics are measurable attributes of a population such as age, sex, and household composition. These characteristics provide planners and researchers with vital information about the structure of societies and how they change over time. Understanding them is essential for designing policies that meet the needs of different groups within a population.

Fill in the blank: Measurable attributes of a population such as age, sex, and household composition are called _____ characteristics.

2.1.1 Age structure and its implications

Age structure refers to the distribution of a population across different age groups. It is often represented in age pyramids, which show the proportion of young, working-age, and elderly populations. Age structure has significant implications for labour supply, education demand, and healthcare needs. For example, a youthful population may require more schools, while an ageing population may demand more healthcare services.

Fill in the blank: Age structure is often represented in _____ pyramids.



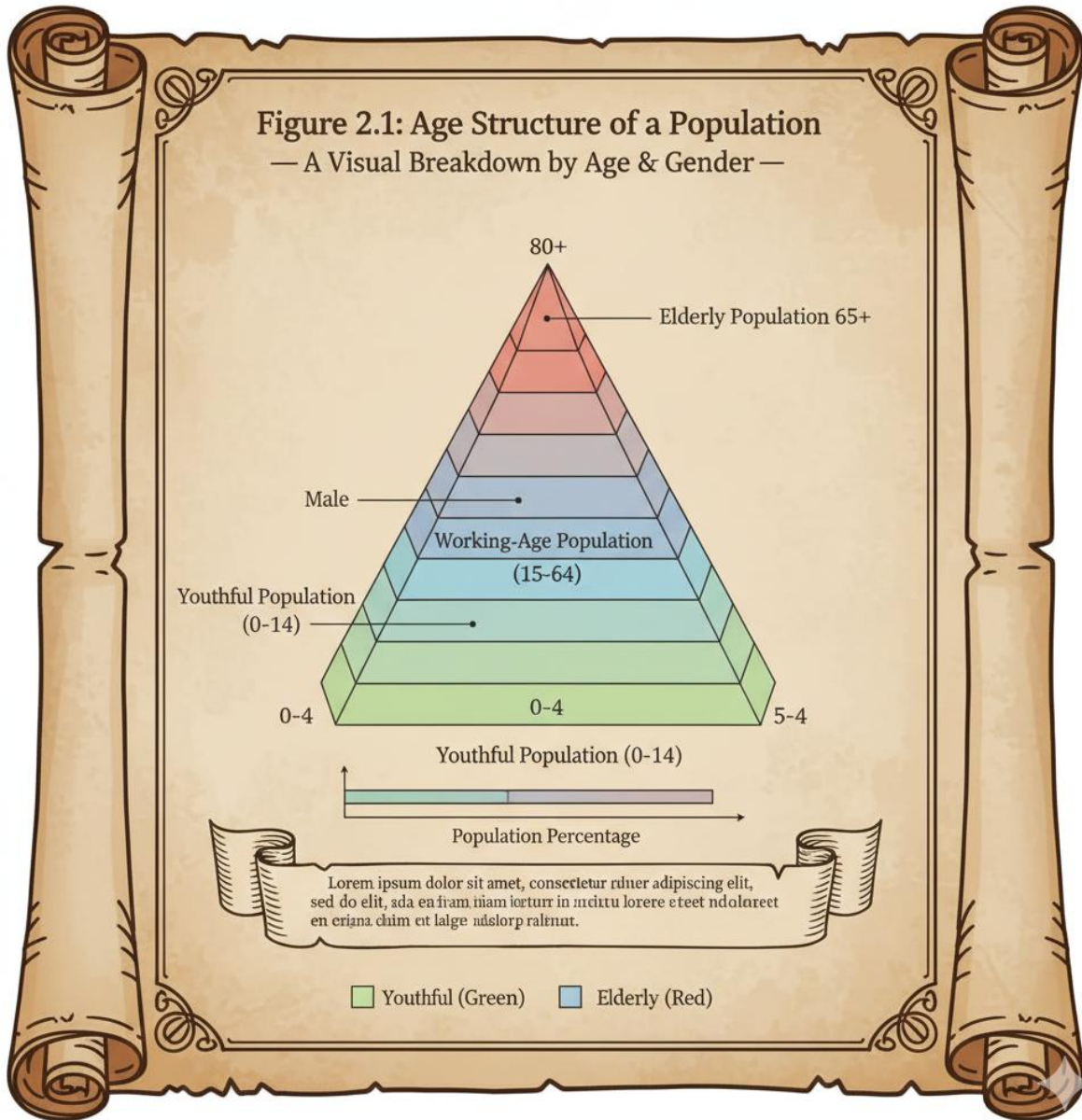


Diagram showing an age pyramid with youthful, working-age, and elderly groups.
Figure 2.1: Age structure of a population

2.1.2 Sex composition and gender balance

Sex composition refers to the proportion of males and females in a population. It is usually expressed as a sex ratio, which compares the number of males to females. **Gender balance** is important for social stability and economic productivity. Imbalances may arise due to cultural



preferences, migration, or health factors, and these can affect marriage patterns, labour markets, and social dynamics.

Fill in the blank: The proportion of males to females in a population is known as the _____ ratio.

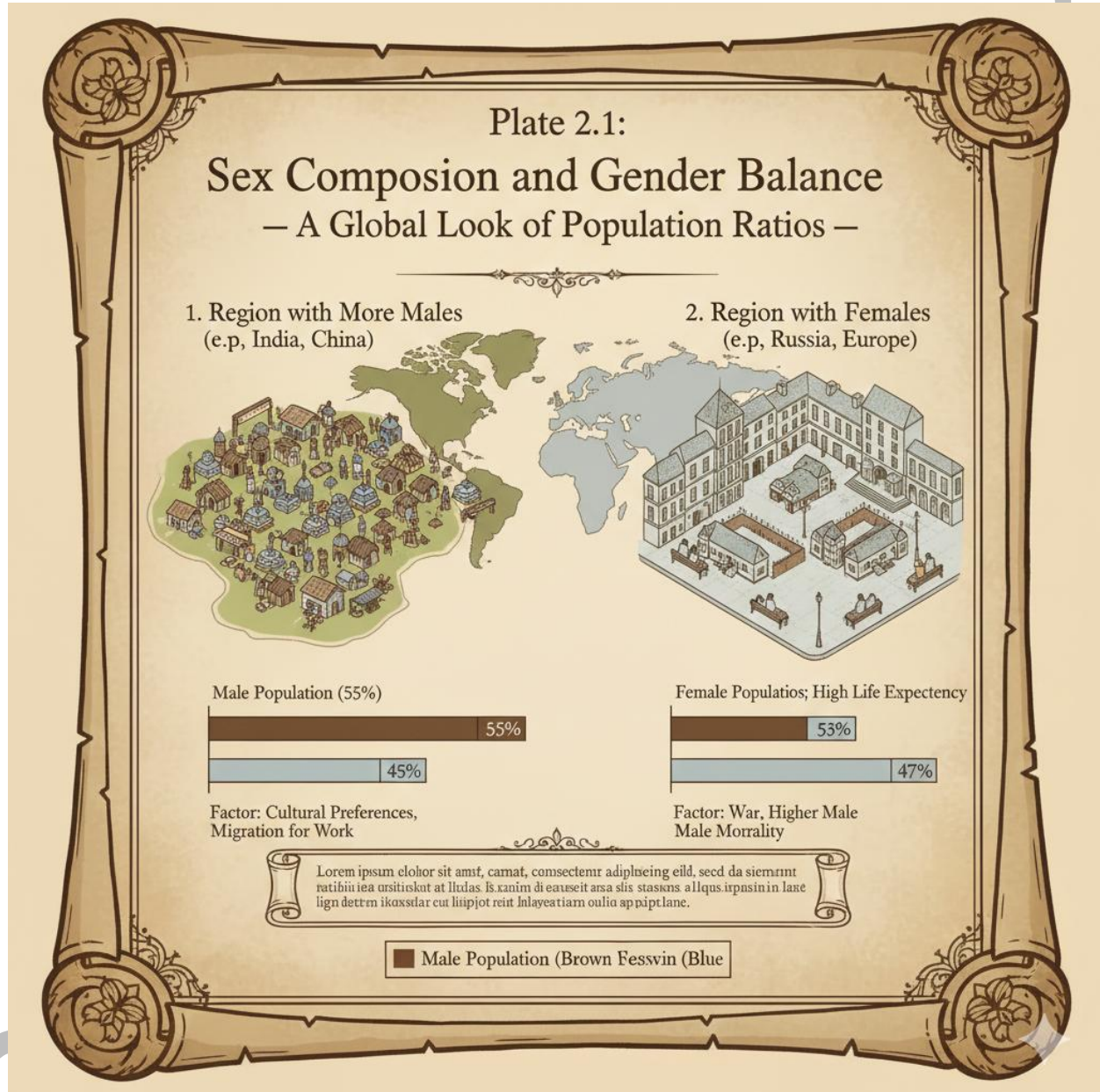


Image showing sex composition in different regions, highlighting variations in male-to-female ratios.

Plate 2.1: Sex composition and gender balance across regions

2.1.3 Household size and family structures



Household size refers to the number of people living together in a single dwelling, while **family structures** describe the organisation of relationships within households, such as nuclear or extended families. Household size and family structures influence housing demand, consumption patterns, and social support systems. Larger households may share resources, while smaller households may require more individual housing units.

Fill in the blank: Household size refers to the number of people living together in a single _____.

Structure	Definition	Planning Implications
Nuclear Family	<i>A household consisting of two parents and their children.</i>	<i>High demand for two- to three-bedroom apartments and proximity to primary schools.</i>
Extended Family	<i>A household including parents, children, and relatives (grandparents, aunts, cousins).</i>	<i>Requirement for larger plots, flexible building designs, and "compound" layouts.</i>
Household Size	<i>The total number of individuals residing in a single dwelling unit.</i>	<i>Directly impacts water consumption, waste generation, and the required size of septic tanks.</i>

Box 2.1: Household size and family structures

Nuclear family: parents and children living together

Extended family: includes relatives such as grandparents, uncles, and cousins

Household size: varies across cultures and influences housing demand and resource use

Pilot questions 2.1

- What are demographic characteristics?
- How is age structure usually represented?
- What is the sex ratio?
- Mention one implication of gender imbalance.
- Define household size.



2.2 Cultural Characteristics of Population

Cultural characteristics are the shared beliefs, practices, and values that shape the identity of a population. They influence how people interact, organise themselves, and respond to change. Understanding cultural characteristics is important for planners because they affect social cohesion, economic behaviour, and the acceptance of policies.

Fill in the blank: Shared beliefs, practices, and values that shape the identity of a population are called _____ characteristics.

2.2.1 Language and communication patterns

Language is a system of communication used by members of a community. It is a key cultural characteristic because it enables social interaction, education, and the transmission of knowledge. **Communication patterns** refer to the ways people use language and symbols to share ideas. Multilingual societies often face challenges in education and governance but also benefit from cultural diversity.

Fill in the blank: A system of communication used by members of a community is called _____.





Diagram showing language distribution and communication patterns in a multilingual society.
Figure 2.2: Language and communication patterns

2.2.2 Religion and belief systems

Religion refers to organised systems of faith and worship, while **belief systems** include broader sets of values and philosophies that guide behaviour. Religion and belief systems influence social norms, laws, and community practices. They can promote unity but may also create divisions if not managed inclusively.



Fill in the blank: Organised systems of faith and worship are referred to as _____.



Image showing diverse religious practices across different regions.
Plate 2.2: Religion and belief systems in society

2.2.3 Traditions, customs, and social norms

Traditions are practices passed down through generations, **customs** are established ways of behaving in specific contexts, and **social norms** are shared rules that guide acceptable behaviour. These cultural elements influence family life, celebrations, and community organisation. They also affect how societies respond to change, such as urbanisation or migration.



Fill in the blank: Shared rules that guide acceptable behaviour in a society are called _____ norms.

Category	Examples	Planning & Spatial Impact
Traditions	<i>Annual festivals (e.g., Durbar, Ojude Oba), rites of passage, ancestral land-titling ceremonies.</i>	<i>Requires the preservation of "Festival Routes" and public squares (Oja) for large gatherings.</i>
Customs	<i>Greeting protocols, traditional dress codes, local food preparation practices.</i>	<i>Influences the design of public entrances and the size of kitchen/storage areas in housing.</i>
Social Norms	<i>Marriage rules, gender roles, and community labor responsibilities (e.g., Owe).</i>	<i>Affects the degree of "privacy" needed in residential layouts and the use of communal spaces.</i>

Box 2.2: Examples of traditions, customs, and social norms

*Traditions: annual festivals, rites of passage
 Customs: greetings, dress codes, food practices
 Social norms: rules about marriage, gender roles, and community responsibilities*

Pilot questions 2.2

What are cultural characteristics?
 Define language as a cultural characteristic.
 What are belief systems?
 Mention one way religion influences society.
 Give one example of a social norm.

2.3 Interactions Between Demographic and Cultural Factors



Demographic and cultural factors are closely connected, shaping how societies grow, adapt, and organise themselves. **Demographic factors** such as age, sex, and household size interact with **cultural factors** like traditions, religion, and social norms to influence fertility, mortality, migration, and social behaviour. Understanding these interactions helps planners anticipate population changes and design inclusive policies.

Fill in the blank: Demographic factors such as age and sex interact with cultural factors like _____ to influence population change.

2.3.1 Influence of culture on fertility and mortality

Fertility refers to the number of children born to women in a population, while **mortality** refers to the incidence of death. Cultural beliefs and practices strongly influence both. For example, traditions that value large families may increase fertility, while cultural taboos or limited access to healthcare may affect mortality. Religion, customs, and social expectations often shape decisions about family size and health practices.

Fill in the blank: Traditions that value large families may increase _____ rates in a population.



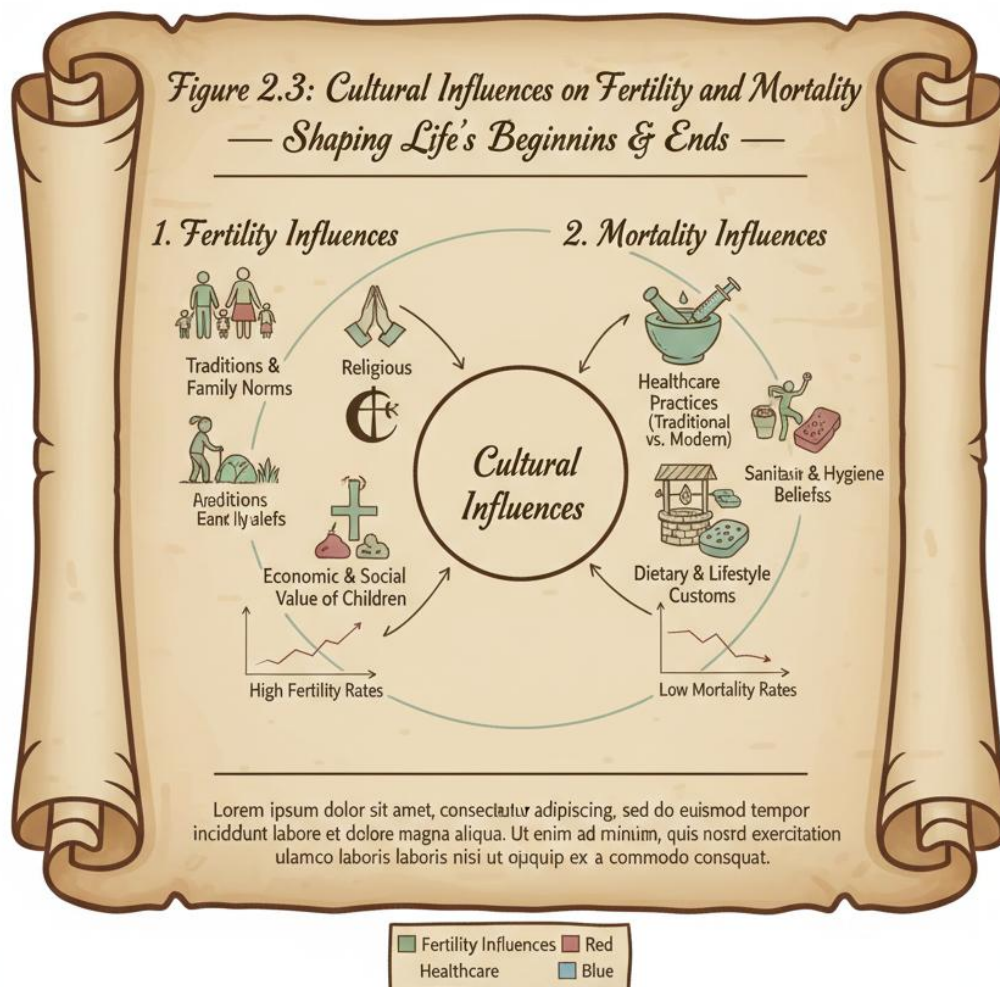


Diagram showing cultural influences on fertility and mortality, including traditions, religion, and healthcare practices.

Figure 2.3: Cultural influences on fertility and mortality

2.3.2 Impact of demographic change on cultural practices

Demographic changes such as ageing populations, youth bulges, or migration can reshape cultural practices. For instance, ageing societies may adapt traditions to support elderly care, while youthful populations may drive new cultural expressions in music, fashion, and



technology. Migration introduces cultural diversity, often blending or transforming existing practices.

Fill in the blank: Ageing societies may adapt traditions to support _____ care.

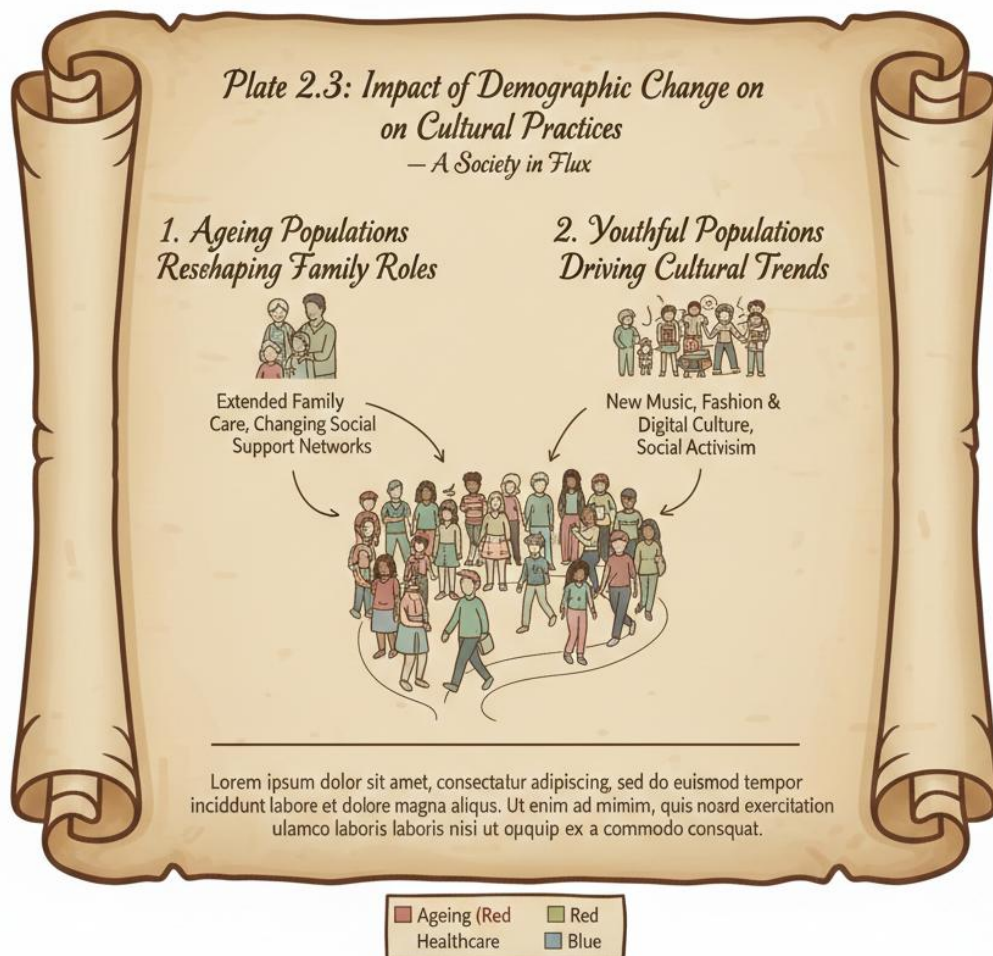


Image showing demographic change influencing cultural practices, such as ageing populations reshaping family roles and youthful populations influencing cultural trends.

Plate 2.3: Impact of demographic change on cultural practices

2.3.3 Migration and cultural diversity

Migration is the movement of people from one place to another, often across regions or countries. It contributes to **cultural diversity**, which refers to the coexistence of different cultural groups within a society. Migration can enrich societies by introducing new languages, foods,



and traditions, but it may also create challenges in integration and social cohesion. Planners must balance these opportunities and challenges to promote inclusive development.

Fill in the blank: Migration contributes to cultural _____ by introducing new languages, foods, and traditions.

Aspect	Impact / Characteristic	Planning Implications
New Practices	<i>Introduction of diverse culinary, religious, and social habits.</i>	<i>Need for flexible zoning to accommodate various religious buildings and specialty markets.</i>
Cultural Enrichment	<i>Increased innovation, diverse skill sets, and vibrant "sense of place."</i>	<i>Opportunities for "Cultural Districts" that drive tourism and local economic growth.</i>
Integration Challenges	<i>Potential for social friction, language barriers, and competition for resources.</i>	<i>Requirement for inclusive public spaces and transparent resource allocation.</i>
Inclusive Policies	<i>Frameworks that ensure all groups have access to housing and services.</i>	<i>Reduces the risk of "ethnic enclaves" or urban segregation.</i>

Box 2.3: Migration and cultural diversity

*Migration introduces new cultural practices into societies
Cultural diversity enriches communities but may pose integration challenges
Inclusive policies help manage diversity for social cohesion and development*

Pilot questions 2.3

How does culture influence fertility and mortality?
Give one example of demographic change that reshapes cultural practices.
What is migration?
Define cultural diversity.



Mention one challenge that cultural diversity may pose for planners.

2.4 Implications for Planning and Development

Demographic and cultural characteristics have direct consequences for planning and development. Planners must consider how population structures and cultural diversity influence housing, education, healthcare, and employment. Ignoring these factors can lead to ineffective policies and social tensions, while recognising them enables inclusive and sustainable development.

Fill in the blank: Planners must consider how population structures and _____ diversity influence housing and services.

2.4.1 Role of demographic and cultural data in policy-making

Demographic data refers to statistical information about population characteristics such as age, sex, and household size. **Cultural data** includes information about language, religion, traditions, and social norms. Together, these data sets guide policy-making by helping governments design programmes that meet the needs of diverse communities. For example, age data informs education planning, while cultural data ensures policies respect traditions and values.

Fill in the blank: Age data informs education planning, while cultural data ensures policies respect _____.





Diagram showing how demographic and cultural data feed into policy-making processes.
Figure 2.4: Role of demographic and cultural data in policy-making

2.4.2 Challenges of cultural diversity in urbanisation

Cultural diversity refers to the coexistence of different cultural groups within a society. In urban areas, diversity can enrich communities by introducing new ideas and practices, but it also presents challenges such as integration, inequality, and potential conflict. Planners must



address these challenges by promoting social cohesion and ensuring equitable access to resources and opportunities.

Fill in the blank: Cultural diversity can enrich communities but also presents challenges such as _____ and inequality.



Image showing cultural diversity in urban areas, highlighting both opportunities and challenges.
Plate 2.4: Cultural diversity in urbanisation

2.4.3 Strategies for inclusive development

Inclusive development means designing policies and programmes that consider the needs of all groups in society, regardless of age, gender, or cultural background. Strategies include



participatory planning, equitable resource distribution, and culturally sensitive policies. Inclusive development fosters fairness, reduces inequality, and strengthens social stability.

Fill in the blank: Inclusive development means designing policies that consider the needs of _____ groups in society.

Strategy	Description	Actionable Goal
Participatory Planning	<i>Engaging community members directly in the design and decision-making process.</i>	<i>Ensures that local knowledge (e.g., historical flooding or footpaths) is captured.</i>
Equitable Distribution	<i>Allocating land, water, and energy based on need rather than social status.</i>	<i>Prevents the formation of "slums" adjacent to "luxury estates."</i>
Culturally Sensitive Policies	<i>Designing rules that respect local customs, religious practices, and traditions.</i>	<i>Boosts community "buy-in" and long-term project sustainability.</i>
Vulnerability Focus	<i>Creating specific programs for women, children, the elderly, and people with disabilities.</i>	<i>Guarantees "Universal Access" to the city's economic and social benefits.</i>

Box 2.4: Strategies for inclusive development

Participatory planning involving community voices

Equitable distribution of resources

Culturally sensitive policies that respect traditions

Programmes addressing vulnerable groups such as women, children, and the elderly

Pilot questions 2.4

What is demographic data?

How does cultural data support policy-making?



Mention one challenge of cultural diversity in urbanisation.
Define inclusive development.
Give one strategy for achieving inclusive development.

Series Summary

This Series has focused on the demographic and cultural characteristics of populations, highlighting their importance in shaping social organisation, economic productivity, and planning decisions. By examining these aspects, you have gained insights into how population structures and cultural attributes interact to influence development outcomes.

We began with demographic characteristics, exploring age structure, sex composition, and household patterns. Then we moved on to cultural characteristics, including language, religion, traditions, and social norms. Following that, we considered the interactions between demographic and cultural factors, such as how culture influences fertility and mortality, and how demographic change reshapes cultural practices. Finally, we examined the implications for planning and development, looking at the role of demographic and cultural data in policy-making, the challenges of cultural diversity in urbanisation, and strategies for inclusive development. In line with the Series Learning Outcomes, you should now be able to describe demographic and cultural characteristics, analyse their interactions, evaluate their implications, and propose strategies for inclusive and sustainable development.

Glossary of Terms

Age structure: The distribution of a population across different age groups, often shown in age pyramids.

Belief systems: Sets of values and philosophies that guide behaviour and decision-making in a society.

Cultural characteristics: Shared beliefs, practices, and values that shape the identity and behaviour of a population.

Cultural diversity: The coexistence of different cultural groups within a society, often resulting from migration.

Demographic characteristics: Measurable attributes of a population such as age, sex, and household composition.

Fertility: The number of children born to women in a population.

Gender balance: The relative proportion of males and females in a population, usually expressed as a sex ratio.

Household size: The number of people living together in a single dwelling.

Inclusive development: Policies and programmes designed to meet the needs of all groups in society fairly and equitably.



Language: A system of communication used by members of a community to share ideas and knowledge.

Migration: The movement of people from one place to another, often across regions or countries.

Mortality: The incidence of death within a population.

Religion: Organised systems of faith and worship that influence social norms and practices.

Social norms: Shared rules that guide acceptable behaviour within a society.

Traditions: Practices passed down through generations that shape cultural identity and community life.

Concept Check Questions [Series 2]

Objective Questions

Which of the following best describes demographic characteristics?

- a) Shared beliefs and traditions
- b) Measurable attributes such as age and sex
- c) Migration patterns
- d) Cultural diversity

(Linked to SLO 2.1)

The proportion of males to females in a population is known as:

- a) Age ratio
- b) Household ratio
- c) Sex ratio
- d) Gender norm

(Linked to SLO 2.1)

Inclusive development is best defined as:

- a) Development that focuses only on economic growth
- b) Development that considers the needs of all groups in society
- c) Development that ignores cultural diversity
- d) Development that reduces population size

(Linked to SLO 2.8)

Short-Answer Questions

Define cultural characteristics. (Linked to SLO 2.2)

State one way religion influences social norms. (Linked to SLO 2.2)

Mention one example of demographic change that reshapes cultural practices. (Linked to SLO 2.4)

What is migration? (Linked to SLO 2.5)

Give one challenge of cultural diversity in urbanisation. (Linked to SLO 2.7)

Long-Answer Questions



Explain how age structure affects planning for education and healthcare. (Linked to SLO 2.1)
Analyse the influence of culture on fertility and mortality. (Linked to SLO 2.3)
Evaluate the role of demographic and cultural data in policy-making. (Linked to SLO 2.6)
Propose strategies for inclusive development in culturally diverse societies. (Linked to SLO 2.8)

Answers to Concept Check Questions [Series 2]

Objective Questions

- b) Measurable attributes such as age and sex
- c) Sex ratio
- b) Development that considers the needs of all groups in society

Short-Answer Questions

Cultural characteristics are shared beliefs, practices, and values that shape the identity of a population.
Religion influences social norms by guiding behaviour, such as marriage practices or community responsibilities.
Ageing populations reshape cultural practices by increasing traditions related to elderly care.
Migration is the movement of people from one place to another, often across regions or countries.
One challenge of cultural diversity in urbanisation is integration difficulties among different cultural groups.

Long-Answer Questions

Basic response: Age structure affects planning because youthful populations require more schools, while ageing populations demand more healthcare services.

Value-added response: Outstanding learners may add that age structure also influences labour supply, economic productivity, and long-term social support systems, requiring balanced investment in education, healthcare, and employment.

Basic response: Culture influences fertility through traditions that value large families, and mortality through practices that affect healthcare access.

Value-added response: Outstanding learners may add that cultural taboos, gender roles, and religious beliefs can shape reproductive behaviour and health outcomes, requiring culturally sensitive interventions to improve wellbeing.

Basic response: Demographic and cultural data guide policy-making by ensuring programmes meet the needs of diverse communities.

Value-added response: Outstanding learners may add that such data also help anticipate future trends, promote equity, and design policies that balance economic growth with cultural respect, strengthening social cohesion.

Basic response: Strategies for inclusive development include participatory planning, equitable resource distribution, and culturally sensitive policies.



Value-added response: Outstanding learners may add that inclusive development also requires addressing vulnerable groups, promoting intercultural dialogue, and integrating diversity into urban planning to achieve sustainable and fair outcomes.

Answers to Pilot Questions [Series 2]

Part 2.1 Demographic Characteristics of Population

Demographic characteristics are measurable attributes of a population such as age, sex, and household composition.

Age structure is usually represented in age pyramids.

The sex ratio is the proportion of males to females in a population.

One implication of gender imbalance is its effect on marriage patterns and labour markets.

Household size is the number of people living together in a single dwelling.

Part 2.2 Cultural Characteristics of Population

Cultural characteristics are shared beliefs, practices, and values that shape the identity of a population.

Language is a system of communication used by members of a community.

Belief systems are sets of values and philosophies that guide behaviour.

Religion influences society by shaping social norms such as marriage practices or laws.

One example of a social norm is rules about gender roles.

Part 2.3 Interactions Between Demographic and Cultural Factors

Culture influences fertility by encouraging large families and mortality through practices affecting healthcare access.

One example of demographic change that reshapes cultural practices is ageing populations adapting traditions for elderly care.

Migration is the movement of people from one place to another.

Cultural diversity is the coexistence of different cultural groups within a society.

One challenge of cultural diversity is integration difficulties among different groups.

Part 2.4 Implications for Planning and Development

Demographic data is statistical information about population characteristics such as age, sex, and household size.

Cultural data supports policy-making by ensuring programmes respect traditions and values.

One challenge of cultural diversity in urbanisation is inequality.

Inclusive development is designing policies and programmes that consider the needs of all groups in society.

One strategy for achieving inclusive development is participatory planning involving community voices.

References and Attributions [Series 2]



This section compiles references, suggested open educational resources (OERs), and attributions for illustrations used in **Series 2: Demographic and Cultural Characteristics of Population**. The referencing style applied here follows APA guidelines for clarity and consistency.

General References

- Dyson, T. (2010). *Population and development: The demographic transition*. Zed Books.
- Livi-Bacci, M. (2017). *A concise history of world population* (6th ed.). Wiley-Blackwell.
- United Nations Department of Economic and Social Affairs. (2022). *World population prospects 2022*. United Nations.
- Weeks, J. R. (2015). *Population: An introduction to concepts and issues* (12th ed.). Cengage Learning.

Illustrations and Attributions

Figure 2.1: Age structure of a population

AI-generated prompt: "Create a labelled age pyramid diagram showing youthful, working-age, and elderly groups."

Suggested OER search string: "age pyramid diagram population structure OER."

Plate 2.1: Sex composition and gender balance across regions

AI-generated prompt: "Generate an image showing sex composition variations across regions, highlighting male-to-female ratios."

Suggested OER search string: "sex composition gender balance population ratio OER image."

Box 2.1: Household size and family structures

AI-generated prompt: "Create a text box summarising household size and family structures, including nuclear and extended families."

Suggested OER search string: "household size family structures nuclear extended OER summary."

Figure 2.2: Language and communication patterns

AI-generated prompt: "Create a labelled diagram showing language distribution and communication patterns in a multilingual society."

Suggested OER search string: "language distribution communication patterns multilingual society OER diagram."

Plate 2.2: Religion and belief systems in society

AI-generated prompt: "Generate an image showing diverse religious practices across different regions."

Suggested OER search string: "religion belief systems diverse practices OER image."

Box 2.2: Examples of traditions, customs, and social norms

AI-generated prompt: "Create a text box summarising examples of traditions, customs, and social norms."

Suggested OER search string: "traditions customs social norms examples OER summary."

Figure 2.3: Cultural influences on fertility and mortality

AI-generated prompt: "Create a labelled diagram showing cultural influences on fertility and mortality, including traditions, religion, and healthcare practices."

Suggested OER search string: "cultural influences fertility mortality population OER diagram."

Plate 2.3: Impact of demographic change on cultural practices



AI-generated prompt: "Generate an image showing demographic change influencing cultural practices, including ageing populations and youthful cultural trends."
Suggested OER search string: "demographic change cultural practices ageing youth migration OER image."

Box 2.3: Migration and cultural diversity

AI-generated prompt: "Create a text box summarising migration and cultural diversity, including opportunities and challenges."

Suggested OER search string: "migration cultural diversity integration opportunities challenges OER summary."

Figure 2.4: Role of demographic and cultural data in policy-making

AI-generated prompt: "Create a labelled diagram showing how demographic and cultural data feed into policy-making processes."

Suggested OER search string: "demographic cultural data policy-making planning OER diagram."

Plate 2.4: Cultural diversity in urbanisation

AI-generated prompt: "Generate an image showing cultural diversity in urban areas, highlighting opportunities and challenges."

Suggested OER search string: "cultural diversity urbanisation opportunities challenges OER image."

Box 2.4: Strategies for inclusive development

AI-generated prompt: "Create a text box summarising strategies for inclusive development, including participatory planning and equitable resource distribution."

Suggested OER search string: "inclusive development strategies participatory planning equitable resources OER summary."

Course code: URP 210

Course title: Urbanisation and Population Studies

Course credit load: 2 Units

List of Series:

Series 1: World Population Growth and Demographic Characteristics

Series 2: Population Composition, Movements and Trends

Series 3: Methods of Population Estimation and Forecasting

Series 4: Urbanisation Processes and City Development in Africa

Series 5: Urbanisation and African Economic Development

3 Methods of Population Estimation and Forecasting

Series outline

Part 1 (3.1): Sources of Population Data

Sub-Part 3.1.1: The population census purpose and conduct



- Sub-Part 3.1.2: Vital registration systems and sample surveys
- Sub-Part 3.1.3: Limitations of population data in developing countries

Part 2 (3.2): Methods of Population Estimation

- Sub-Part 3.2.1: Arithmetic and geometric growth methods
- Sub-Part 3.2.2: The exponential growth method
- Sub-Part 3.2.3: The component method of population estimation

Part 3 (3.3): Methods of Population Forecasting

- Sub-Part 3.3.1: Trend extrapolation methods
- Sub-Part 3.3.2: The cohort-survival method
- Sub-Part 3.3.3: Ratio and regression methods

Part 4 (3.4): Applying Population Forecasts in Planning

- Sub-Part 3.4.1: Translating population forecasts into planning standards
- Sub-Part 3.4.2: Uncertainty, scenarios, and sensitivity analysis
- Sub-Part 3.4.3: Population forecasting in Nigerian planning practice

Introduction

Planning is an inherently future-oriented discipline. A planner who designs a school, a water treatment plant, or a new residential district must estimate not only the current population to be served but also the population that will exist ten, twenty, or thirty years from now. Getting these estimates right or at least getting them within a reasonable range is one of the most critical technical tasks in planning practice. Overestimating future population leads to wasteful over-provision; underestimating it leads to inadequate services and infrastructure that cannot be easily or cheaply retrofitted.

The aim of this Series is to equip you with the knowledge and skills to identify sources of population data, apply methods of population estimation, describe methods of population forecasting, and translate forecasts into planning decisions.

We shall commence this Series by examining the sources of population data including the census, vital registration, and surveys. Next, we will explore the main mathematical methods used to estimate current population between census counts. Following that, we will describe the principal forecasting methods used to project future population. Finally, we will wrap up by considering how population forecasts are applied in planning practice, including how uncertainty is managed through scenario analysis.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- SLO 3.1** identify and evaluate the main sources of population data and their limitations,
- SLO 3.2** apply arithmetic, geometric, exponential, and component methods to estimate population,



SLO 3.3 describe the principal methods of population forecasting including trend extrapolation and cohort-survival,

SLO 3.4 apply population forecasts to planning decisions and manage uncertainty through scenario analysis.

3.1 Sources of Population Data

3.1.1 The population census purpose and conduct

A population census is a complete enumeration of all persons in a defined territory at a specific point in time. It is the most comprehensive source of demographic data available and typically collects information on population size, age, sex, household composition, occupation, education, and housing conditions. Censuses are usually conducted every ten years. In Nigeria, censuses were conducted in 1963, 1973 (cancelled), 1991, 2006, and a long-delayed one in 2023. The **census** provides the baseline data from which all population estimates and forecasts are built, and is the foundation of national planning, resource allocation, and electoral delimitation.

Fill in the blank: The population census is the most comprehensive source of demographic data and provides the _____ from which all estimates and forecasts are built.





Short description: Image of census enumerators conducting a door-to-door household survey in an urban neighbourhood.

Plate 3.1 Census enumerators conducting a household survey

3.1.2 Vital registration systems and sample surveys

Vital registration systems are administrative records that continuously record births, deaths, marriages, and divorces. When functioning effectively, they provide annual data on fertility and mortality that can be used to update census estimates between enumeration periods. However, in many developing countries, vital registration is incomplete, particularly in rural areas. **Sample surveys** such as the Demographic and Health Survey (DHS) and the Multiple Indicator Cluster Survey (MICS) are conducted periodically to collect detailed demographic, health, and social



data from representative samples of the population. They complement census data and fill gaps left by incomplete registration.

Fill in the blank: Sample surveys such as the DHS complement census data and fill gaps left by incomplete vital _____.

3.1.3 Limitations of population data in developing countries

Population data in developing countries, including Nigeria, face several well-documented limitations. **Undercounting** occurs when portions of the population particularly the rural poor, nomadic groups, and urban slum dwellers are missed in census enumeration. **Age misreporting** is common, with many respondents rounding their age to the nearest five or ten. **Political interference** in census results has been a particular concern in Nigeria, where census figures have implications for revenue allocation and political representation. **Long inter-censal intervals** mean that estimates for the years between censuses carry increasing uncertainty. Planners must understand and account for these limitations when using population data.

Fill in the blank: Undercounting occurs when portions of the population are _____ in census enumeration.

Pilot questions 3.1

What is a population census and what data does it typically collect?

Which of the following is not a source of population data?

What is the main limitation of vital registration systems in developing countries?

Fill in the blank: Age misreporting in censuses often involves respondents rounding their age to the nearest five or _____.

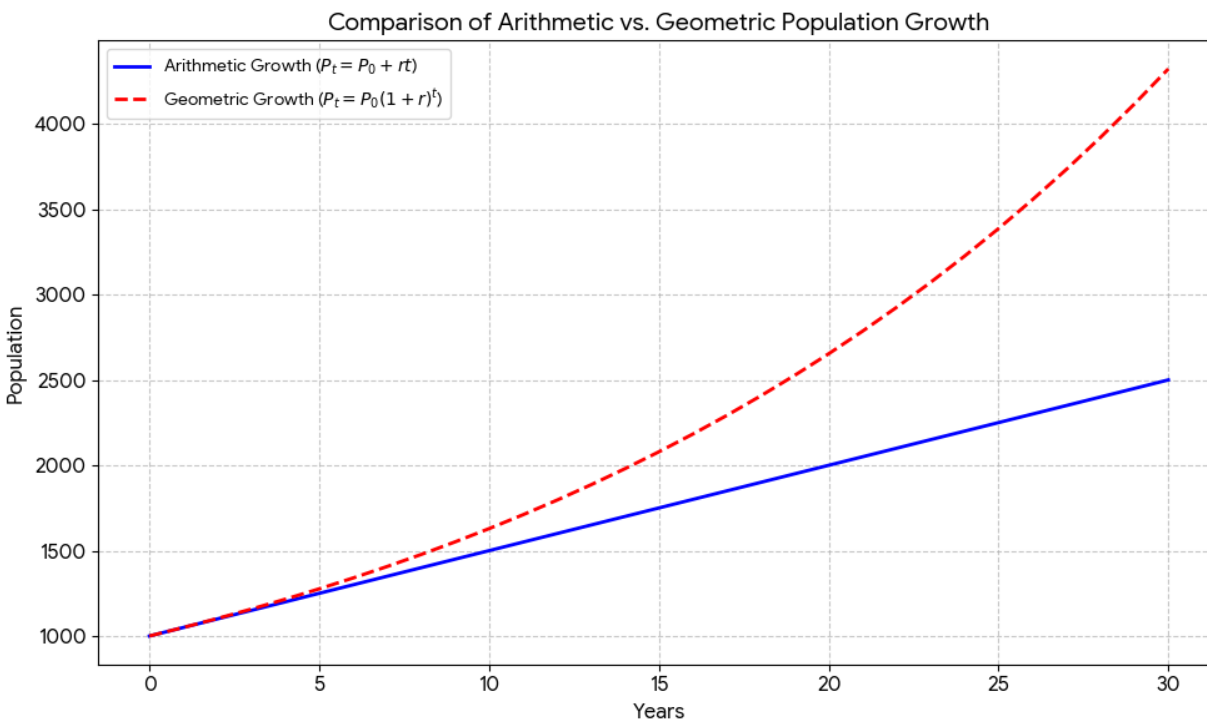
3.2 Methods of Population Estimation

3.2.1 Arithmetic and geometric growth methods

The **arithmetic growth method** assumes that population increases by a constant absolute amount each year. The formula is: $P_t = P_0 + r \times t$, where P_t is the population at time t , P_0 is the base population, r is the annual absolute increase, and t is the number of years. This method is appropriate for slow-growing or stable populations. The **geometric growth method** assumes that population grows at a constant rate each year, compounding like interest. The formula is: $P_t = P_0 \times (1 + r)^t$, where r is the annual growth rate expressed as a decimal. This method is more appropriate for rapidly growing populations and is widely used in planning practice.

Fill in the blank: The geometric growth method assumes that population grows at a constant _____ each year, compounding over time.





Short description: Graph comparing arithmetic and geometric population growth curves over a 30-year projection period starting from the same base population.

Figure 3.1 Comparison of arithmetic and geometric population growth curves

3.2.2 The exponential growth method

The **exponential growth method** treats population growth as a continuous process rather than a discrete annual increment. The formula is: $P_t = P_0 \times e^{(r \times t)}$, where e is the base of natural logarithms (approximately 2.718), r is the continuous growth rate, and t is time in years. The continuous growth rate r is derived from census data using the formula: $r = (\ln P_t - \ln P_0) / t$. The exponential method gives slightly higher projections than the geometric method at the same nominal growth rate and is preferred for short-interval estimates and scientific demographic work. It is also the method most commonly applied in Nigerian population projections by the National Population Commission.

Fill in the blank: The exponential growth method treats population growth as a _____ process rather than a discrete annual increment.

3.2.3 The component method of population estimation

The **component method** estimates population by accounting separately for each of the three components of population change: births, deaths, and migration. The formula is: $P_t = P_0 + B - D + NM$, where B is the number of births, D is the number of deaths, and NM is net migration during the period. This method is more accurate than mathematical growth methods because it disaggregates the drivers of change, but it requires reliable data on all three components which is often difficult to obtain in countries with incomplete vital registration. It is most appropriate for national or regional estimates where administrative data are reasonably complete.



Fill in the blank: The component method estimates population by accounting separately for births, deaths, and _____.



Population Estimation Formulae Reference

Used in Site Planning for Capacity Analysis

	Formula	Best Used For
Model	$P_n = P_0 + (n \times d)$	Short-term projections in stable, slow-growth
Aritihetic	$P_n = P_0 (1 + r)^n$	Areas with consistent, percentage-based growth trends.
Geometric	$P_n = P_0 \times e^{rn}$	Rapid growth scenarios where rates are continuous.
Exponential	$P_n \times e^{ern}$	
Component	$P_n = (B - D) + (I - E)$	Detailed, multi-factor analysis (Census-based)



Variable Key & Definitions

- P_n Future population at year n .
- d_0 Current (base) population
- r Annual growth rate, decimal).
- n B, D, I, E
- n Numbs, Deaths, Immigration, and Emigration

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Planning Note

While the Arithmetic, Geometric, and Exponential are quick for high-level site capacity checks, the "gold standard" for site planning is the Component method that accounts for migration—which is the most volatile variable in regional development.

Box 3.1 Summary of population estimation formulae

Short description: A box presenting the formulae for arithmetic growth, geometric growth, exponential growth, and the component method side by side for easy reference.

Pilot questions 3.2

What assumption does the arithmetic growth method make about population change?

Which growth method is most appropriate for a rapidly growing population?



Fill in the blank: In the exponential growth formula, e is the base of natural _____ with a value of approximately 2.718.

What are the three components accounted for in the component method?

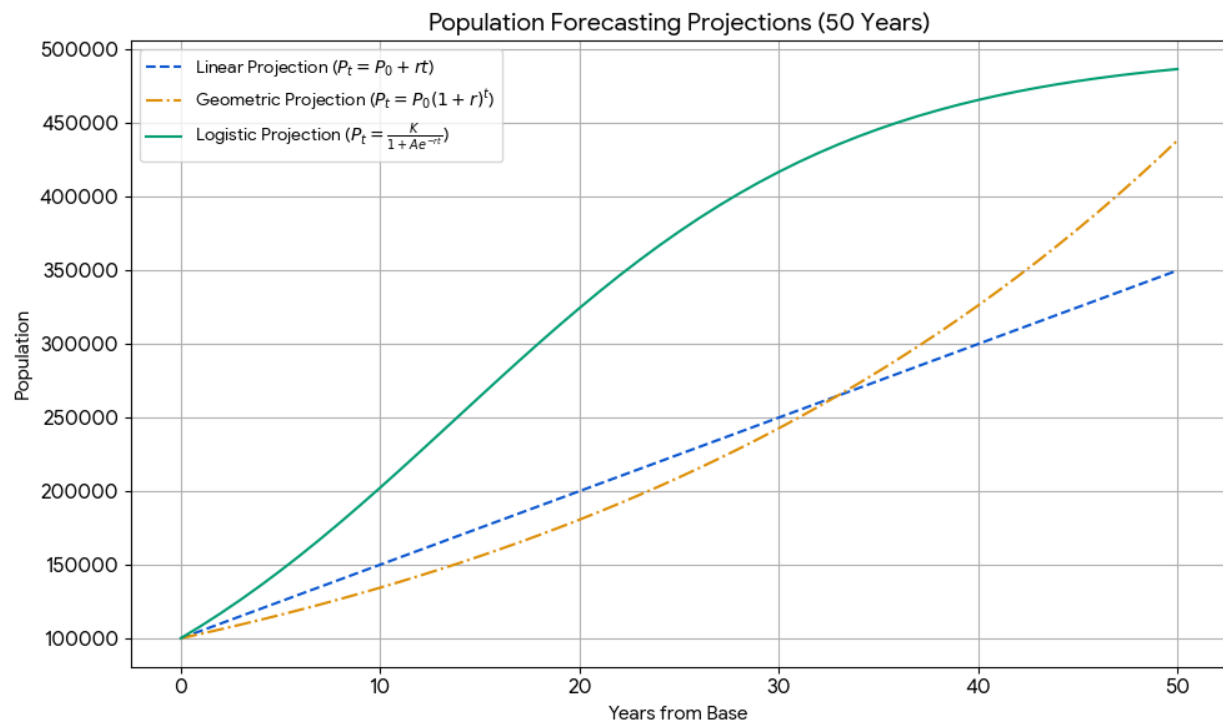
Which population estimation method is most appropriate where administrative data on births, deaths, and migration are reliable?

3.3 Methods of Population Forecasting

3.3.1 Trend extrapolation methods

Trend extrapolation methods project future population by extending the mathematical growth trend observed in past census data. **Linear extrapolation** projects a constant absolute increment into the future, equivalent to arithmetic growth. **Geometric extrapolation** projects a constant growth rate. **Logistic curve fitting** assumes that growth follows an S-shaped curve, accelerating initially, then slowing as the population approaches a ceiling determined by environmental or economic capacity the **carrying capacity**. Trend extrapolation methods are simple to apply but assume that past trends will continue unchanged, which may not hold if social, economic, or policy conditions shift significantly.

Fill in the blank: Logistic curve fitting assumes that population growth follows an S-shaped curve that slows as it approaches a _____ capacity.



Short description: Graph showing three population forecasting curves linear, geometric, and logistic projected from the same base data over 50 years.

Figure 3.2 Linear, geometric, and logistic population forecasting curves



3.3.2 The cohort-survival method

The **cohort-survival method** is the most detailed and widely used demographic forecasting technique. It divides the base population into age-sex cohorts and projects each cohort forward using age-specific **survival rates** (derived from life tables) and age-specific **fertility rates**. New births are added each period as the product of the female population in reproductive age groups and the relevant fertility rates. The resulting projection preserves the age-sex structure of the population and is therefore particularly valuable for planning services that are age-specific, such as schools, maternity units, and elderly care facilities. It requires detailed age-sex data and reliable demographic rates, making it more demanding than trend extrapolation methods.

Fill in the blank: The cohort-survival method projects each age-sex cohort forward using age-specific survival rates and age-specific _____ rates.

3.3.3 Ratio and regression methods

Ratio methods forecast the population of a small area by applying a projected ratio of that area's population to a larger reference area whose future population is already known. For example, if a local government area (LGA) consistently accounts for 3% of a state's population, its future population can be estimated by applying that ratio to the state's projected population. **Regression methods** use statistical relationships between population and one or more indicator variables such as housing units, school enrolments, or utility connections to forecast population. Both methods are particularly useful at the local level where data are sparse, and are frequently applied in Nigerian planning practice to estimate LGA and ward-level populations between national census counts.

Fill in the blank: Ratio methods forecast small-area population by applying a projected ratio to a larger _____ area whose future population is known.

Pilot questions 3.3

What is trend extrapolation and what key assumption does it make?

Explain the logistic curve in population forecasting.

Describe how the cohort-survival method projects future population.

How does the ratio method estimate the population of a small area?

Fill in the blank: The cohort-survival method is particularly valuable for planning age-specific services such as schools and _____ care facilities.

3.4 Applying Population Forecasts in Planning

3.4.1 Translating population forecasts into planning standards

A population forecast becomes useful for planning only when it is translated into specific demands for land, infrastructure, and services. This translation relies on **planning standards** normative ratios that specify the level of provision required per unit of population. For example, a standard might specify one primary school per 2,500 residents, one health centre per 10,000 residents, or 8 hectares of open space per 1,000 residents. By multiplying the forecasted population by the relevant standard, the planner derives the number and scale of



facilities required in each planning horizon year. In Nigeria, standards are published by agencies such as the Federal Ministry of Works and Housing and state planning authorities.

Fill in the blank: Planning standards specify the level of provision required per _____ of population, such as one school per 2,500 residents.



Short description: Image of a planner working at a desk applying population forecast data to a planning spreadsheet showing facility requirements.

Plate 3.2 A planner translating population forecasts into facility requirements

3.4.2 Uncertainty, scenarios, and sensitivity analysis



All population forecasts are uncertain. The further into the future a projection extends, the wider the plausible range of outcomes becomes. Planners manage this uncertainty through **scenario analysis**, which generates three or more alternative projections based on different assumptions about future fertility, mortality, and migration typically labelled high, medium, and low variants. **Sensitivity analysis** tests how sensitive the forecast outcome is to changes in key assumptions. Infrastructure that must be sized before demand is confirmed such as water mains, sewers, and major roads is typically designed to the **high scenario** to avoid under-provision, while short-lifespan facilities may be sized to the medium or low scenario with provision for future expansion.

Fill in the blank: Scenario analysis generates alternative projections labelled high, medium, and _____ variants based on different demographic assumptions.

3.4.3 Population forecasting in Nigerian planning practice

In Nigerian planning practice, population forecasting faces particular challenges. The most recent reliable national census was conducted in 2006, meaning that current population figures for most planning exercises are themselves estimates derived from projection of nearly two-decade-old data. The **geometric growth method** at an assumed national growth rate of approximately 2.6% per annum is the most commonly applied approach by state and local planning authorities. For more detailed work, the **cohort-survival method** is employed by the National Population Commission and international agencies. Planners are encouraged to use multiple methods, compare their results, and document their assumptions clearly to ensure that forecasts are transparent, defensible, and open to revision as new data become available.

Fill in the blank: In Nigerian planning practice, planners are encouraged to use multiple methods, compare results, and document _____ clearly.

Pilot questions 3.4

What is a planning standard and how is it used to translate a population forecast into facility requirements?

Why is scenario analysis important in population forecasting for planning?

Explain why long-lifespan infrastructure is typically designed to the high population scenario.

What growth method is most commonly used in Nigerian planning practice and what growth rate is typically assumed?

Fill in the blank: Sensitivity analysis tests how _____ the forecast outcome is to changes in key demographic assumptions.

Series Summary

This Series has introduced you to the methods used to estimate current populations and forecast future ones two of the most technically important skills in planning practice. We began by examining the sources of population data, including the census, vital registration, and sample surveys, and acknowledged the particular limitations these sources face in developing countries such as Nigeria.



We then explored the main estimation methods arithmetic, geometric, exponential, and component before turning to forecasting methods including trend extrapolation, the cohort-survival technique, and ratio and regression approaches. Finally, we examined how forecasts are applied in practice through planning standards, and how uncertainty is managed through scenario and sensitivity analysis, with particular attention to the Nigerian planning context. By engaging with these topics, you should now be able to identify data sources, apply estimation methods, describe forecasting techniques, and translate forecasts into planning decisions, as outlined in the Series Learning Outcomes.

Glossary of Terms

Arithmetic growth method: A population estimation method that assumes a constant absolute annual increase in population.

Carrying capacity: The maximum population size that an environment or economy can sustain, used as the ceiling in logistic growth models.

Census: A complete enumeration of all persons in a defined territory at a specific point in time.

Cohort-survival method: A forecasting technique that projects age-sex cohorts forward using age-specific survival and fertility rates.

Component method: A population estimation method that accounts separately for births, deaths, and net migration.

Exponential growth method: A population estimation method that models growth as a continuous compounding process using the natural logarithm base.

Geometric growth method: A population estimation method that assumes a constant annual percentage growth rate compounding over time.

Logistic curve: An S-shaped growth curve that models initial acceleration followed by deceleration as population approaches carrying capacity.

Planning standard: A normative ratio specifying the level of a facility or service required per unit of population.

Ratio method: A forecasting technique that projects small-area population using its historical ratio to a larger reference area.

Regression method: A statistical forecasting technique that uses relationships between population and indicator variables to project future population.

Sample survey: A periodic collection of demographic data from a representative sample of the population, such as the Demographic and Health Survey.

Scenario analysis: The generation of multiple population projections based on different assumptions about future demographic rates.

Sensitivity analysis: A technique that tests how sensitive a forecast outcome is to variations in key demographic assumptions.

Trend extrapolation: A forecasting approach that projects future population by extending the mathematical growth trend observed in past data.



Vital registration: An administrative system that continuously records births, deaths, marriages, and divorces.

Concept Check Questions 3

Objective questions

Define a population census. (Linked to SLO 3.1)

Identify two limitations of population data in developing countries. (Linked to SLO 3.1)

Fill in the blank: The component method accounts for births, deaths, and _____.
(Linked to SLO 3.2)

State one advantage of the cohort-survival method over trend extrapolation. (Linked to SLO 3.3)

Short-answer questions

5. Distinguish between the arithmetic and geometric growth methods of population estimation. (Linked to SLO 3.2)

6. Explain how the cohort-survival method projects future population. (Linked to SLO 3.3)

7. Describe how planning standards are used to translate population forecasts into facility requirements. (Linked to SLO 3.4)

8. Why is scenario analysis important in applying population forecasts to infrastructure planning? (Linked to SLO 3.4)

Long-answer questions

9. Compare and evaluate the arithmetic, geometric, and exponential methods of population estimation, explaining when each is most appropriate. (Linked to SLO 3.2)

10. Evaluate the challenges of population forecasting in Nigerian planning practice and recommend approaches that planners can adopt to produce reliable and defensible forecasts. (Linked to SLO 3.1, 3.4)

Answers to Concept Check Questions 3

Objective questions

A population census is a complete enumeration of all persons in a defined territory at a specific point in time.

Undercounting and age misreporting.

Net migration.

The cohort-survival method preserves the age-sex structure of the projected population, making it more useful for planning age-specific services.

Short-answer questions

5. The arithmetic method assumes a constant absolute annual increase and is suitable for slow-growing populations. The geometric method assumes a constant percentage growth rate



compounding each year and is more appropriate for rapidly growing populations, producing progressively higher projections than the arithmetic method over time.

6. The cohort-survival method divides the base population into age-sex cohorts, applies age-specific survival rates to project each cohort forward, and adds new births generated by applying age-specific fertility rates to the female population in reproductive age groups. This is repeated for each projection period.

7. Planners multiply the forecasted population by the relevant planning standard for example, one primary school per 2,500 residents to calculate the number of facilities required at each planning horizon year. This allows the spatial and financial programme of development to be determined.

8. Scenario analysis is important because all forecasts are uncertain. By producing high, medium, and low variants, planners can design infrastructure that is robust across a range of futures. Long-lifespan infrastructure is typically designed to the high scenario to avoid under-provision, while short-lifespan facilities may be sized to the medium scenario with phased expansion provisions.

Long-answer questions

9. *Basic response:* Arithmetic growth is simplest and suits stable populations; geometric growth suits rapidly growing ones and compounds annually; exponential growth is continuous and gives slightly higher results than geometric at the same rate.

Value-added response: Outstanding learners may evaluate how the choice of method affects the magnitude of the projected population over long periods with the gap between arithmetic and exponential projections widening significantly at high growth rates and may discuss how the planner should select the method most consistent with the observed historical growth pattern of the specific area being studied.

10. *Basic response:* Challenges include reliance on a 2006 census baseline, incomplete vital registration, undercounting, and political sensitivity of population figures. Planners should use multiple methods, document assumptions, and update estimates regularly.

Value-added response: Outstanding learners may recommend a tiered approach using the geometric method for broad planning at LGA level, the cohort-survival method for age-specific facility planning, and ratio methods for ward-level estimates and may discuss how engagement with the National Population Commission and use of DHS survey data can partially compensate for the limitations of outdated census baselines.

Answers to Pilot Questions 3

Part 3.1

A complete enumeration of all persons in a territory at a specific time, collecting data on age, sex, occupation, education, and housing

A land use map

Incomplete coverage, particularly in rural areas, meaning vital events are not fully recorded

Ten

Part 3.2



That population increases by a constant absolute amount each year

Geometric growth method

Logarithms

Births, deaths, and net migration

The component method

Part 3.3

Trend extrapolation projects future population by extending past growth trends; it assumes those trends will continue unchanged into the future

A logistic curve is an S-shaped growth model that assumes growth accelerates initially then slows as population approaches the carrying capacity of the environment

It divides the population into age-sex cohorts, applies survival rates to project each cohort forward, and adds new births using age-specific fertility rates

By applying the area's historical ratio to a larger reference area whose future population is already projected

Elderly

Part 3.4

A planning standard is a normative ratio of provision per population unit; it is multiplied by the forecasted population to determine the number of facilities required

Because all forecasts are uncertain; scenario analysis allows planners to design for a range of possible futures and avoid both under- and over-provision

Long-lifespan infrastructure cannot easily be expanded after construction, so it must be sized to the highest plausible future population to avoid costly under-provision

The geometric growth method at an assumed rate of approximately 2.6% per annum

Sensitive

References and Attributions 3

Course content references

Bogue, D. J. (1969). *Principles of Demography*. New York: Wiley.

National Population Commission of Nigeria (2006). *2006 Population and Housing Census of the Federal Republic of Nigeria: Priority Tables*. Abuja: NPC.

Smith, S. K., Tayman, J., & Swanson, D. A. (2013). *A Practitioner's Guide to State and Local Population Projections*. New York: Springer.

Illustrations

Plate 3.1 Census enumerators conducting a household survey

AI-generated suggestion: "Generate an image of census enumerators with clipboards conducting a door-to-door household survey in an urban neighbourhood."

Suggested OER search string: "census enumeration household survey urban OER."

Figure 3.1 Comparison of arithmetic and geometric population growth curves



AI-generated suggestion: "Generate a line graph comparing arithmetic and geometric population growth curves over 30 years starting from the same base population, showing the divergence between the two methods."

Suggested OER search string: "arithmetic geometric population growth comparison graph OER."

Box 3.1 Summary of population estimation formulae

AI-generated suggestion: "Generate a text box presenting the formulae for arithmetic, geometric, and exponential population growth and the component method side by side for reference."

Suggested OER search string: "population estimation formulae arithmetic geometric exponential component OER."

Figure 3.2 Linear, geometric, and logistic population forecasting curves

AI-generated suggestion: "Generate a line graph showing three population forecasting curves including linear, geometric, and logistic projections over 50 years from the same base data."

Suggested OER search string: "population forecasting linear geometric logistic curves graph OER."

Plate 3.2 A planner translating population forecasts into facility requirements

AI-generated suggestion: "Generate an image of a planner at a desk applying population forecast figures to a planning spreadsheet calculating school, health centre, and open space requirements."

Suggested OER search string: "planner population forecast planning standards facility requirements OER."

Attributions

All AI prompts are intended for use with generative tools to create original illustrations. Suggested search strings are provided to locate open educational resources (OER) for non-commercial academic use.

Course code: URP 210

Course title: Urbanisation and Population Studies

Course credit load: 2 Units

List of Series:

Series 1: World Population Growth and Demographic Characteristics

Series 2: Population Composition, Movements and Trends

Series 3: Methods of Population Estimation and Forecasting

Series 4: Urbanisation Processes and City Development in Africa

Series 5: Urbanisation and African Economic Development



4 Urbanisation Processes and City Development in Africa

Series outline

Part 1 (4.1): Concepts and Theories of Urbanisation

Sub-Part 4.1.1: Definition and measurement of urbanisation

Sub-Part 4.1.2: Theories explaining urban growth

Sub-Part 4.1.3: Urbanisation trends globally and in Africa

Part 2 (4.2): Historical Development of African Cities

Sub-Part 4.2.1: Pre-colonial urban centres in Africa

Sub-Part 4.2.2: Colonial urbanisation and its legacy

Sub-Part 4.2.3: Post-independence urban growth in Africa

Part 3 (4.3): Characteristics of African Urban Growth

Sub-Part 4.3.1: Primacy, secondary cities, and urban hierarchies

Sub-Part 4.3.2: Informal settlements and housing challenges

Sub-Part 4.3.3: Infrastructure deficits and service delivery gaps

Part 4 (4.4): Urbanisation in Nigeria

Sub-Part 4.4.1: History and pace of urbanisation in Nigeria

Sub-Part 4.4.2: Structure of the Nigerian urban system

Sub-Part 4.4.3: Planning challenges of rapid urbanisation in Nigeria

Introduction

Africa is urbanising faster than any other region on earth. Cities that were modest administrative outposts a century ago are today sprawling metropolises of several million people, straining infrastructure, housing supply, and governance systems that were never designed for populations of such scale. Understanding how African cities have developed from their pre-colonial origins through colonial restructuring to contemporary rapid growth is essential for planners who must design and manage these environments today and into the future.

The aim of this Series is to equip you with the knowledge and skills to define and explain urbanisation, trace the historical development of African cities, describe the distinctive characteristics of African urban growth, and analyse the specific urbanisation challenges facing Nigeria.

We shall commence this Series by examining the concept and measurement of urbanisation and the principal theories that explain urban growth. Next, we will trace the historical development of African cities from pre-colonial times through the colonial period to post-independence growth. Following that, we will examine the defining characteristics of African urban development including primacy, informality, and infrastructure deficits. Finally, we will wrap up by focusing specifically on urbanisation in Nigeria its history, urban structure, and planning challenges.



Series Learning Outcomes

Upon completing this Series, you should be able to:

- SLO 4.1** define urbanisation and explain the principal theories of urban growth,
- SLO 4.2** trace the historical development of African cities from pre-colonial origins to post-independence growth,
- SLO 4.3** describe the characteristics of African urban development including primacy, informality, and infrastructure deficits,
- SLO 4.4** analyse the history, structure, and planning challenges of urbanisation in Nigeria.

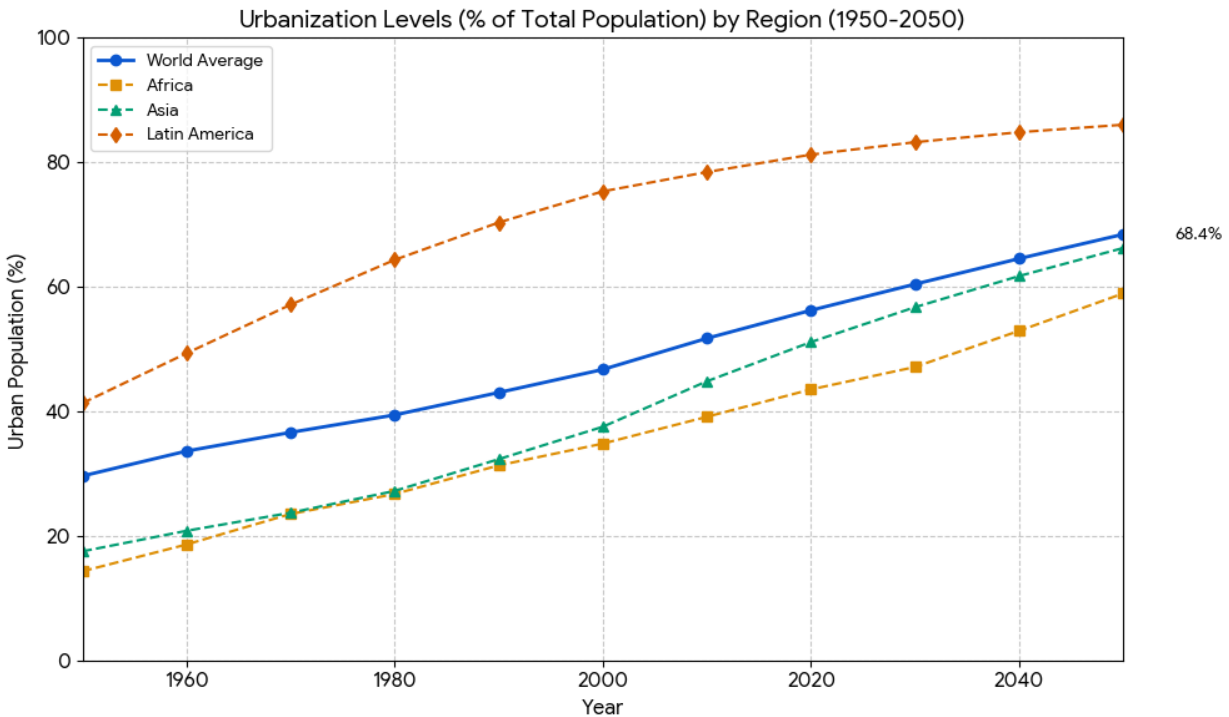
4.1 Concepts and Theories of Urbanisation

4.1.1 Definition and measurement of urbanisation

Urbanisation is the process by which an increasing proportion of a country's population comes to live in urban areas. It is distinct from absolute urban population growth: a country can have a growing urban population while its level of urbanisation remains constant if rural areas are growing at the same rate. **Level of urbanisation** is measured as the percentage of the total population living in urban settlements. The definition of what constitutes an **urban area** varies between countries in Nigeria, settlements with populations of 20,000 or more are conventionally classified as urban making international comparisons imprecise. Urbanisation results from three processes: rural-urban migration, natural increase within urban areas, and the reclassification of rural settlements as urban.

Fill in the blank: Urbanisation results from rural-urban migration, natural increase within urban areas, and the _____ of rural settlements as urban.





Short description: Line graph showing the urban population as a percentage of total population for Africa, Asia, Latin America, and the world from 1950 to 2050.

Figure 4.1 Urban population as a percentage of total population by world region, 1950–2050

4.1.2 Theories explaining urban growth

Several theoretical frameworks explain why cities grow. **Modernisation theory** links urbanisation to economic development, arguing that industrialisation draws workers from rural to urban areas. **Dependency theory** argues that urbanisation in Africa and other developing regions is not a product of genuine industrialisation but of colonial and neo-colonial economic structures that concentrated activity in a few export-oriented centres. **Central place theory**, developed by Walter Christaller, explains the size and spacing of urban settlements in terms of the range and threshold of services they provide. **Growth pole theory** holds that economic development clusters around dominant urban centres poles that generate spread effects to surrounding regions.

Fill in the blank: Central place theory explains the size and spacing of urban settlements in terms of the range and _____ of the services they provide.

4.1.3 Urbanisation trends globally and in Africa

For the first time in history, more than half of the world's population now lives in urban areas, a threshold crossed around 2007. Africa remains the least urbanised continent with an urban share of approximately 44% in 2023, but it is urbanising at the fastest rate projected to double its urban population by 2050. Sub-Saharan Africa's urbanisation is driven primarily by **natural increase** rather than rural-urban migration, distinguishing it from earlier historical urbanisation in Europe and East Asia. This means African cities are growing rapidly even without large-scale



industrial employment to absorb new urban residents, creating a distinctive pattern of **urbanisation without industrialisation**.

Fill in the blank: Sub-Saharan Africa's urbanisation is driven primarily by natural increase rather than _____ migration.

Pilot questions 4.1

Define urbanisation and distinguish it from urban population growth.

Which theory links urbanisation in Africa to colonial economic structures?

What threshold did global urban population cross around 2007?

Fill in the blank: Africa is urbanising at the fastest rate and is projected to _____ its urban population by 2050.

4.2 Historical Development of African Cities

4.2.1 Pre-colonial urban centres in Africa

Contrary to the colonial narrative that Africa was a continent without cities, significant urban centres existed long before European colonisation. **Kano, Katsina, and Zaria** in northern Nigeria were flourishing commercial and administrative cities of the Hausa-Fulani empires. **Benin City** was the capital of the powerful Benin Kingdom with a sophisticated road network and palace complex. **Ile-Ife** and **Ibadan** were major Yoruba centres. Further afield, **Great Zimbabwe, Timbuktu, and Axum** were renowned cities of trade, scholarship, and governance. These pre-colonial cities demonstrate that Africa possessed indigenous urban traditions rooted in agriculture, trade, religion, and political organisation.

Fill in the blank: Kano, Katsina, and Zaria were flourishing commercial and administrative cities of the Hausa-Fulani _____.





Short description: Image of the ancient walled city of Kano showing the old city layout with the central palace and dense traditional urban fabric.

Plate 4.1 The ancient walled city of Kano a pre-colonial African urban centre

4.2.2 Colonial urbanisation and its legacy

Colonial urbanisation fundamentally restructured the African urban landscape. European colonial powers established new cities or radically reorganised existing ones to serve the needs of colonial administration and resource extraction rather than the welfare of African populations. Key features of colonial urbanism included racial **spatial segregation**, with distinct European quarters separated from African residential areas; the concentration of investment in **port cities** and administrative capitals connected to export-oriented infrastructure; and the marginalisation of indigenous urban traditions. Cities such as Lagos, Nairobi, Dakar, and Accra were shaped



profoundly by colonial planning doctrines. The legacy of colonial urbanisation in terms of spatial inequality, infrastructure orientation, and governance structures persists in African cities today.

Fill in the blank: Colonial cities were established to serve the needs of colonial administration and resource _____ rather than African welfare.

4.2.3 Post-independence urban growth in Africa

Following independence, African cities grew at unprecedented rates as restrictions on African urbanisation imposed under colonial rule were lifted and rural populations moved in large numbers to access urban opportunities. **Post-independence urbanisation** was characterised by rapid population growth that outpaced the capacity of governments to provide housing, infrastructure, and services. Many new states inherited urban systems oriented towards export and administration rather than domestic development, and lacked the institutional and financial capacity to manage rapid urban expansion. The result was the proliferation of **informal settlements**, growing **urban poverty**, and widening gaps in service delivery that continue to define the urban experience for a majority of African city dwellers.

Fill in the blank: Post-independence urbanisation outpaced the capacity of governments to provide housing, infrastructure, and _____.

Pilot questions 4.2

Name two pre-colonial urban centres in Nigeria and identify their cultural origins.

What were the main purposes for which colonial cities in Africa were established?

Fill in the blank: Racial spatial _____ was a key feature of colonial urbanism in Africa.

What happened to African urban growth rates following independence?

Which of the following best describes the legacy of colonial urbanisation in Africa?

4.3 Characteristics of African Urban Growth

4.3.1 Primacy, secondary cities, and urban hierarchies

Urban primacy refers to the dominance of a single large city the **primate city** over the urban system of a country. The primate city is typically several times larger than the second city and concentrates the majority of the country's economic activity, government functions, services, and infrastructure. In Africa, primate cities include Lagos (Nigeria), Kinshasa (DRC), Cairo (Egypt), and Nairobi (Kenya). Urban primacy is often a legacy of colonial spatial organisation.

Secondary cities intermediate-sized urban centres are increasingly recognised as critical to balanced national development, but remain underfunded and under-planned in most African countries. A balanced **urban hierarchy** distributes functions and populations more evenly and reduces the overconcentration of opportunities in a single city.

Fill in the blank: Urban primacy refers to the dominance of a single large _____ city over the urban system of a country.



AFRICAN URBAN HIERARCHY



Short description: Diagram showing a typical African urban hierarchy with a dominant primate city at the top, secondary cities in the middle, and small towns and rural settlements at the base.

Figure 4.2 A typical African urban hierarchy

4.3.2 Informal settlements and housing challenges

Informal settlements also known as slums, shanty towns, or unplanned areas are residential areas that develop outside the formal planning and legal system, typically characterised by insecure land tenure, substandard housing, overcrowding, and poor access to basic services. The United Nations estimates that over half of Africa's urban population lives in informal settlements. They are the primary housing response to rapid urbanisation in the absence of adequate formal sector provision. **Slum upgrading** the in-situ improvement of existing informal



settlements through the provision of infrastructure, tenure security, and community facilities is now widely recognised as a more realistic and humane approach than demolition and relocation.

Fill in the blank: Slum upgrading involves the in-situ improvement of informal settlements through infrastructure, tenure security, and community _____.

4.3.3 Infrastructure deficits and service delivery gaps

Rapid urbanisation has outpaced infrastructure investment across Africa, producing significant **infrastructure deficits** in transport, water supply, sanitation, energy, and solid waste management. The majority of urban residents in sub-Saharan Africa lack access to piped water, formal sanitation, and reliable electricity. **Service delivery gaps** are most acute in informal settlements where residents rely on expensive informal providers for water and transport. Addressing infrastructure deficits requires sustained public investment, innovative financing mechanisms, and governance reforms that empower local authorities to plan, invest, and maintain urban services. Without adequate infrastructure, African cities cannot realise their economic potential or provide decent living conditions for their growing populations.

Fill in the blank: Addressing infrastructure deficits requires sustained public investment, innovative financing, and governance reforms that empower _____ authorities.



KEY CHARACTERISTICS OF AFRICAN URBAN GROWTH

1. URBAN PRIMACY

- Dominance of one large "primate" city (e.g., Lagos, Kinshasa).
- Disproportionate share of population & economic activity.
- Often a legacy of colonial administration & investment.

2. INFORMAL SETTLEMENTS

- Widespread growth of unplanned, informal housing.
- Limited access of basic services (water, sanitation, urban electricity).
- Home a large percentage of the land and utilities.
- Strain on existing services due to rapid population growth.
- Funding challenges for new infrastructure projects

4. URBANISATION WITHOUT INDUSTRIALISATION

- Indicators: public transport, and utilities.
- Rapid urban growth not driven by manufacturing boom.
- Expansion of informal sector employment.
- Service-based economies with limited formal job creation

Box 4.1 Key characteristics of African urban growth

Short description: A box summarising the defining features of African urbanisation including primacy, informality, infrastructure deficits, and urbanisation without industrialisation.

Pilot questions 4.3

Define urban primacy and explain why it is a concern for national development.

What are informal settlements and what conditions characterise them?

Why is slum upgrading preferred over demolition as a policy response to informal settlements?

Describe two infrastructure deficits commonly found in African cities.

Fill in the blank: Over half of Africa's urban population lives in _____ settlements.



4.4 Urbanisation in Nigeria

4.4.1 History and pace of urbanisation in Nigeria

Nigeria has one of the longest urban traditions in Africa, with ancient cities such as Kano, Ile-Ife, Benin City, and Ibadan predating European contact. The colonial period introduced new coastal cities particularly Lagos and reorganised existing ones around administrative and export functions. At independence in 1960, Nigeria's urban population was approximately 15%. By 2006, the census recorded an urban share of around 49%, and current estimates place it above 54%. Nigeria's urban population is growing at approximately 4% per annum, driven by both natural increase and rural-urban migration. With a total population projected to reach 400 million by 2050, Nigeria is expected to have one of the largest urban populations in the world.

Fill in the blank: At independence in 1960, Nigeria's urban population was approximately _____ per cent.



Short description: Image showing the contrast between modern high-rise buildings and informal settlements in Lagos, illustrating the dual nature of Nigerian urban growth.

Plate 4.2 The dual urban landscape of Lagos formal development and informal settlements

4.4.2 Structure of the Nigerian urban system

Lagos is Nigeria's primate city and one of the largest cities in Africa, with a metropolitan population estimated at between 15 and 20 million. It is the commercial and financial capital, though not the political capital. **Abuja**, the federal capital territory, is a planned city developed from the 1980s to serve as a neutral political capital. Other major cities include **Kano**, **Ibadan**, **Port Harcourt**, **Benin City**, **Kaduna**, and **Enugu**. Nigeria's urban system is characterised by



significant primacy, with Lagos dominant, but a relatively more developed secondary city layer than many other African countries. The creation of new states and federal capital territory has also stimulated the growth of state capitals as secondary urban centres.

Fill in the blank: Abuja was developed as a planned city from the 1980s to serve as a neutral political _____.

4.4.3 Planning challenges of rapid urbanisation in Nigeria

Nigeria's rapid urbanisation has generated acute planning challenges. **Housing** demand far exceeds supply, with an estimated deficit of over 17 million units. **Traffic congestion** in Lagos and other major cities imposes significant economic costs. **Inadequate water and sanitation** infrastructure affects the majority of urban residents. **Flooding** is a growing risk in low-lying urban areas exacerbated by uncontrolled development and poor drainage. **Land administration** challenges, including the dominance of customary land tenure and the complexity of the Land Use Act of 1978, obstruct formal housing development and infrastructure provision. Addressing these challenges requires strengthened planning institutions, adequate funding for urban infrastructure, and policies that integrate the formal and informal dimensions of Nigerian urban development.

Fill in the blank: Nigeria's housing deficit is estimated at over _____ million units, far exceeding current supply.

Pilot questions 4.4

Describe the history of urbanisation in Nigeria from pre-colonial times to the present.

What is the role of Lagos in the Nigerian urban system?

Why was Abuja developed as Nigeria's federal capital?

Identify three planning challenges associated with rapid urbanisation in Nigeria.

Fill in the blank: Nigeria's urban population is growing at approximately _____ per cent per annum.

Series Summary

This Series has examined urbanisation processes and city development in Africa with particular attention to the Nigerian context. We began by defining urbanisation, distinguishing it from urban population growth, and exploring the principal theories of urban development before reviewing global and African urbanisation trends.

We then traced the historical development of African cities from their pre-colonial origins through colonial restructuring to post-independence rapid growth. We went on to examine the defining characteristics of African urban development urban primacy, informal settlements, and infrastructure deficits before focusing specifically on Nigeria's urbanisation history, urban structure, and planning challenges. By engaging with these topics, you should now be able to define urbanisation, explain its theories, trace African urban history, describe the characteristics of African cities, and analyse the Nigerian urbanisation experience, as outlined in the Series Learning Outcomes.



Glossary of Terms

Central place theory: A theory explaining the size and spacing of urban settlements based on the range and threshold of the services they provide.

Colonial urbanisation: The restructuring of African cities during the colonial period to serve administrative and resource extraction functions.

Dependency theory: A theory arguing that urbanisation in developing regions reflects colonial and neo-colonial economic structures rather than genuine industrialisation.

Growth pole theory: A theory holding that economic development clusters around dominant urban centres that generate spread effects to surrounding regions.

Infrastructure deficit: A shortfall in the provision of essential urban infrastructure including transport, water, sanitation, and energy.

Informal settlement: A residential area that develops outside the formal planning and legal system, characterised by insecure tenure, substandard housing, and limited services.

Level of urbanisation: The percentage of a country's total population living in urban areas.

Modernisation theory: A theory linking urbanisation to economic development and the movement of labour from rural to urban areas through industrialisation.

Post-independence urbanisation: The rapid urban growth experienced across Africa after colonial rule ended, driven by migration and natural increase.

Primate city: The largest city in a national urban system, typically several times larger than the second city and disproportionately dominant in economic and political functions.

Secondary cities: Intermediate-sized urban centres below the primate city, important for balanced national development.

Slum upgrading: The in-situ improvement of informal settlements through infrastructure provision, tenure security, and community facilities.

Urban hierarchy: The ranked system of urban settlements of different sizes and functions within a country or region.

Urban primacy: The disproportionate dominance of a single large city over the urban system of a country.

Urbanisation: The process by which an increasing proportion of a population comes to live in urban areas.

Urbanisation without industrialisation: A pattern of urban growth in which cities expand without a corresponding growth in formal industrial employment, characteristic of sub-Saharan Africa.

Concept Check Questions 4

Objective questions

Define urbanisation. (Linked to SLO 4.1)

Identify two pre-colonial urban centres in Nigeria. (Linked to SLO 4.2)



Fill in the blank: Urban primacy refers to the dominance of a single large _____ city.
(Linked to SLO 4.3)

State one major planning challenge of rapid urbanisation in Nigeria. (Linked to SLO 4.4)

Short-answer questions

5. Explain the concept of urbanisation without industrialisation and why it characterises sub-Saharan Africa. (Linked to SLO 4.1)
6. Describe two features of colonial urbanisation in Africa and explain their lasting legacy. (Linked to SLO 4.2)
7. Explain why slum upgrading is now preferred over demolition as a response to informal settlements in African cities. (Linked to SLO 4.3)
8. Describe the structure of the Nigerian urban system and the role of Lagos within it. (Linked to SLO 4.4)

Long-answer questions

9. Trace the historical development of African cities from pre-colonial origins through colonialism to post-independence growth, explaining how each phase shaped the contemporary African city. (Linked to SLO 4.2)
10. Evaluate the planning challenges of rapid urbanisation in Nigeria and propose measures that planners and policymakers could adopt to address them. (Linked to SLO 4.4)

Answers to Concept Check Questions 4

Objective questions

Urbanisation is the process by which an increasing proportion of a population comes to live in urban areas.

Kano and Ile-Ife.

Primate.

Housing deficit.

Short-answer questions

5. Urbanisation without industrialisation describes urban growth that is not accompanied by a corresponding growth in formal industrial employment. In sub-Saharan Africa, cities are expanding primarily through natural increase rather than industrial job creation, meaning that large urban populations lack formal employment, driving informality and poverty.
6. Two features are racial spatial segregation, which divided cities into separate European and African areas, and investment concentration in export-oriented port cities and administrative capitals. Their legacy includes persistent spatial inequality, informal settlements on former African residential peripheries, and infrastructure still oriented towards export rather than domestic circulation.
7. Slum upgrading is preferred because demolition displaces large numbers of low-income households without providing viable alternatives, generating social hardship and simply relocating poverty. Upgrading improves conditions in place, retains established community networks and livelihoods, and is far more cost-effective at scale.



8. The Nigerian urban system is headed by Lagos, the primate city and commercial capital with a population of 15–20 million. Abuja is the planned federal capital. Other major cities include Kano, Ibadan, Port Harcourt, and Kaduna. The system retains colonial-era concentration but has a more developed secondary city layer than many African countries, partly due to the creation of new states.

Long-answer questions

9. *Basic response:* Pre-colonial cities reflected indigenous trade, governance, and culture. Colonial cities were restructured for administration and export, introducing segregation and coastal orientation. Post-independence growth was rapid, informal, and poorly served.

Value-added response: Outstanding learners may trace specific continuities and ruptures across phases for example, how colonial road and rail networks cemented the primacy of coastal cities over inland pre-colonial centres, or how post-independence informality directly reflects the failure to replace the colonial housing system with viable formal alternatives and may discuss whether contemporary planning has adequately reckoned with these historical inheritances.

10. *Basic response:* Challenges include housing deficit, congestion, inadequate water and sanitation, flooding, and land administration problems. Responses include upgrading informal settlements, investing in infrastructure, and reforming the Land Use Act.

Value-added response: Outstanding learners may evaluate how these challenges are structurally interconnected for example, how insecure land tenure discourages private housing investment, which deepens the deficit and expands informality, which in turn undermines infrastructure provision and may propose integrated policy responses that address tenure, finance, planning capacity, and secondary city development simultaneously.

Answers to Pilot Questions 4

Part 4.1

Urbanisation is the increasing proportion of a population living in urban areas; urban population growth refers to the absolute increase in city populations, which can occur even without urbanisation if rural growth keeps pace

Dependency theory

More than half of the world's population living in urban areas

Double

Part 4.2

Kano Hausa-Fulani; Ile-Ife Yoruba

Colonial administration and resource extraction for export

Segregation

They accelerated dramatically as restrictions on African movement were lifted and rural populations moved to cities

Persistent spatial inequality, informal settlements, and infrastructure oriented towards export

Part 4.3



Urban primacy is the disproportionate dominance of one city over the national urban system; it concentrates opportunities in one place and leaves secondary cities and rural areas underdeveloped

Areas outside the formal planning system characterised by insecure tenure, substandard housing, overcrowding, and limited access to services

Because upgrading improves conditions for residents in place, preserves livelihoods and community networks, and is more cost-effective than demolition and relocation which simply displace poverty

Inadequate water supply and poor sanitation infrastructure

Informal

Part 4.4

Nigeria has ancient pre-colonial cities; colonial rule introduced coastal cities and reorganised existing ones; post-independence growth has been rapid, with urbanisation rising from 15% at independence to over 54% today

Lagos is the primate city and commercial capital, the largest city in Nigeria and one of the largest in Africa, concentrating economic activity, finance, and services

To serve as a neutral federal capital removed from the ethnic and regional tensions associated with Lagos

Housing deficit, traffic congestion, and inadequate water and sanitation

Four

References and Attributions 4

Course content references

- Mabogunje, A. L. (1968). *Urbanization in Nigeria*. London: University of London Press.
- Parnell, S., & Pieterse, E. (Eds.). (2014). *Africa's Urban Revolution*. London: Zed Books.
- United Nations Human Settlements Programme (2014). *The State of African Cities 2014: Re-imagining Sustainable Urban Transitions*. Nairobi: UN-Habitat.

Illustrations

Figure 4.1 Urban population as a percentage of total population by world region, 1950–2050

AI-generated suggestion: "Generate a line graph showing urbanisation levels as a percentage of total population for Africa, Asia, Latin America, and the world average from 1950 to 2050."

Suggested OER search string: "urbanisation levels world regions line graph 1950 2050 OER."

Plate 4.1 The ancient walled city of Kano a pre-colonial African urban centre

AI-generated suggestion: "Generate an aerial illustration of an ancient African walled city showing a central palace, traditional compounds, markets, and city walls."

Suggested OER search string: "ancient African walled city traditional urban fabric OER."



Figure 4.2 A typical African urban hierarchy

AI-generated suggestion: "Generate a pyramid diagram showing an African urban hierarchy with a primate city at the top, secondary cities in the middle tier, and small towns and rural settlements at the base."

Suggested OER search string: "African urban hierarchy primate city secondary cities diagram OER."

Box 4.1 Key characteristics of African urban growth

AI-generated suggestion: "Generate a text box summarising the key characteristics of African urban growth including urban primacy, informal settlements, infrastructure deficits, and urbanisation without industrialisation."

Suggested OER search string: "African urban growth characteristics informality primacy infrastructure OER."

Plate 4.2 The dual urban landscape of Lagos formal development and informal settlements

AI-generated suggestion: "Generate an image showing the contrasting urban landscape of a large African city with modern high-rise buildings alongside dense informal settlements."

Suggested OER search string: "Lagos urban landscape formal informal settlements contrast OER."

Attributions

All AI prompts are intended for use with generative tools to create original illustrations. Suggested search strings are provided to locate open educational resources (OER) for non-commercial academic use.

Course code: URP 210

Course title: Urbanisation and Population Studies

Course Unit: 2 Units

Series 1: World Population Growth and Distribution
Series 2: Demographic and Cultural Characteristics of Population
Series 3: Population Composition, Movements, and Trends
Series 4: Methods of Population Estimation and Forecasting
Series 5: Urbanisation and African Economic Development

Here is the proposed outline for Series 5:

Part 5.1 Introduction to urbanisation and economic development in Africa



Definition of urbanisation and economic development
Historical context of African urbanisation
Relevance of urbanisation to Africa's development trajectory

Part 5.2 Patterns and drivers of urbanisation in Africa

Demographic and social factors
Economic and political drivers
Regional variations in urbanisation trends

Part 5.3 Impacts of urbanisation on African economies

Positive impacts: industrialisation, labour markets, innovation
Negative impacts: unemployment, informal settlements, inequality
Case studies of selected African cities

Part 5.4 Policy responses and planning strategies

National and regional policies on urban growth
Sustainable urban development strategies
Future prospects for African urbanisation and economic development

Introduction

Across Africa, cities are expanding rapidly, reshaping economies and societies in profound ways. Urbanisation is not only changing where people live but also influencing how they work, access services, and contribute to national development. Understanding this relationship between urban growth and economic transformation is vital for planners, policymakers, and learners of urban studies, as it highlights both opportunities and challenges for sustainable development across the continent.

The aim of this Series is to examine the dynamics of urbanisation in Africa and to evaluate its impacts on economic development, while also considering the strategies and policies that can harness urban growth for inclusive and sustainable progress.

We shall commence this Series by introducing the concepts of urbanisation and economic development, setting them within Africa's historical and contemporary context. Next, we will explore the patterns and drivers of urbanisation, looking at demographic, social, economic, and political influences as well as regional variations. Following that, we will analyse the impacts of urbanisation on African economies, considering both positive contributions such as industrialisation and innovation, and negative effects such as unemployment and inequality, supported by case studies of selected cities. Finally, we will wrap up by examining policy responses and planning strategies, highlighting sustainable approaches and future prospects for African urbanisation and economic development.

Series Learning Outcomes

Upon completing this Series, you should be able to:



- SLO 5.1** define the concepts of urbanisation and economic development in the African context,
- SLO 5.2** explain the historical background and relevance of urbanisation to Africa's development trajectory,
- SLO 5.3** describe demographic and social factors driving urbanisation in Africa,
- SLO 5.4** analyse economic and political drivers of urbanisation across African regions,
- SLO 5.5** compare regional variations in urbanisation patterns within Africa,
- SLO 5.6** evaluate the positive impacts of urbanisation on African economies, including industrialisation and innovation,
- SLO 5.7** assess the negative impacts of urbanisation such as unemployment, informal settlements, and inequality,
- SLO 5.8** examine case studies of selected African cities to illustrate the impacts of urbanisation,
- SLO 5.9** identify national and regional policy responses to urban growth in Africa,
- SLO 5.10** propose sustainable urban development strategies suitable for African contexts, and
- SLO 5.11** appraise future prospects for African urbanisation and its role in economic development.

5.1 Introduction to Urbanisation and Economic Development in Africa

Urbanisation is one of the most significant forces shaping Africa's development today.

Urbanisation refers to the increasing proportion of people living in towns and cities, while **economic development** is the process by which nations improve the economic, social, and political well-being of their people. Together, these processes are deeply interconnected, as urban growth often stimulates economic activity, while economic development can accelerate urbanisation.

Fill in the blank: Urbanisation refers to the increasing proportion of people living in _____ and cities.

5.1.1 Definition of urbanisation and economic development

Urbanisation involves both physical expansion of cities and the migration of people from rural to urban areas. It is often accompanied by changes in lifestyle, employment, and social organisation. Economic development, on the other hand, is measured not only by growth in income but also by improvements in education, healthcare, infrastructure, and governance.

Fill in the blank: Economic development is measured not only by growth in income but also by improvements in _____, healthcare, infrastructure, and governance.



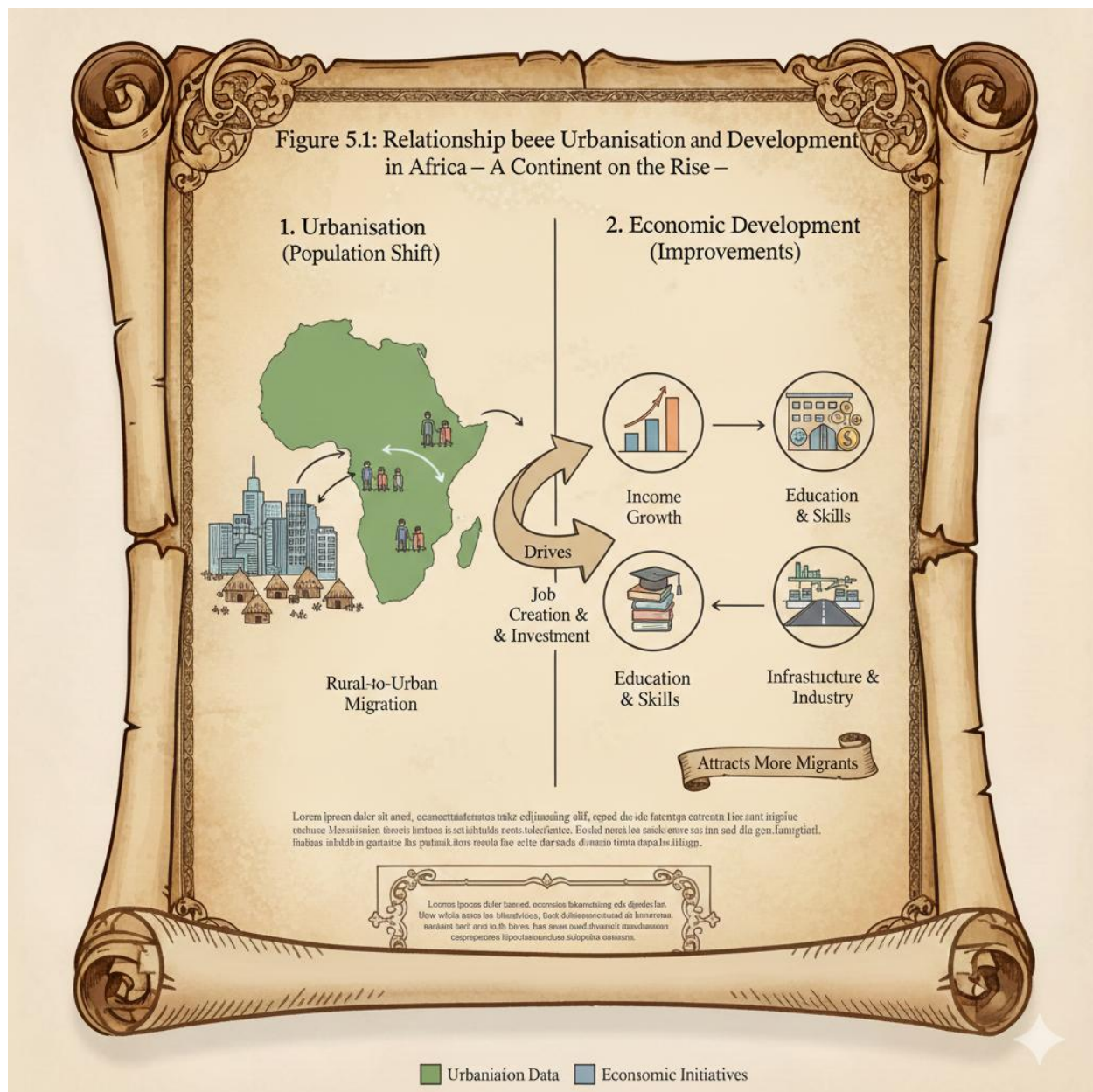


Diagram showing the relationship between urbanisation (population shift to cities) and economic development (improvements in income, education, and infrastructure).

Figure 5.1: Relationship between urbanisation and economic development

5.1.2 Historical context of African urbanisation

Africa's urbanisation has unique historical roots. Colonial policies created administrative and commercial centres that later grew into major cities. Post-independence, rapid population growth and rural-to-urban migration accelerated urbanisation. Unlike in some other regions,



African urbanisation has often occurred without corresponding industrialisation, leading to challenges such as unemployment and informal settlements.

Fill in the blank: African urbanisation has often occurred without corresponding _____, leading to challenges such as unemployment.



Image showing historical African city growth, with colonial-era administrative buildings alongside modern urban expansion.

Plate 5.1: Historical context of African urbanisation

5.1.3 Relevance of urbanisation to Africa's development trajectory



Urbanisation is central to Africa's future because cities are hubs of innovation, trade, and governance. They provide opportunities for education, healthcare, and employment, but also present challenges such as congestion, pollution, and inequality. For Africa to achieve sustainable development, urbanisation must be managed in ways that maximise its benefits while minimising its risks.

Fill in the blank: Cities are hubs of innovation, trade, and _____, making urbanisation central to Africa's development.

Dimension	Potential Benefits	Critical Challenges
Socio-Economic	<i>Centralized access to specialized healthcare, higher education, and diverse job markets.</i>	<i>Rising urban poverty, high cost of living, and the growth of informal settlements.</i>
Innovation & Trade	<i>Creation of "Economic Hubs" that lower the cost of trade and foster technological leapfrogging.</i>	<i>Overwhelmed infrastructure, traffic gridlock, and inefficient logistics.</i>
Governance	<i>Increased political awareness, easier tax collection, and stronger civil society participation.</i>	<i>Administrative strain and the difficulty of providing services to "unmapped" areas.</i>
Environment	<i>Potential for "Compact Cities" that preserve rural agricultural land.</i>	<i>Pollution, waste management crises, and increased vulnerability to climate change (flooding).</i>

Box 5.1: Key relevance of urbanisation to Africa's development

Provides opportunities for education, healthcare, and employment
Stimulates innovation and trade
Strengthens governance and political participation
Presents challenges such as congestion, pollution, and inequality
Requires sustainable management for long-term development



Pilot questions 5.1

Define urbanisation.

What is economic development?

State one historical factor that contributed to African urbanisation.

Why is urbanisation central to Africa's development trajectory?

Mention one challenge associated with African urbanisation.

5.2 Patterns and Drivers of Urbanisation in Africa

Urbanisation in Africa is shaped by diverse patterns and driven by multiple factors. These include demographic changes, social transformations, economic opportunities, and political influences. Understanding these drivers helps explain why cities are expanding rapidly and why urbanisation varies across regions.

Fill in the blank: Urbanisation in Africa is shaped by diverse _____ and driven by multiple factors.

5.2.1 Demographic and social factors

Demographic factors refer to population-related influences such as fertility, mortality, and migration. Africa's high fertility rates and declining mortality have contributed to rapid population growth, much of which is concentrated in urban areas. **Social factors** include education, lifestyle changes, and cultural shifts that encourage people to move to cities in search of better opportunities.

Fill in the blank: Africa's high fertility rates and declining _____ have contributed to rapid population growth.



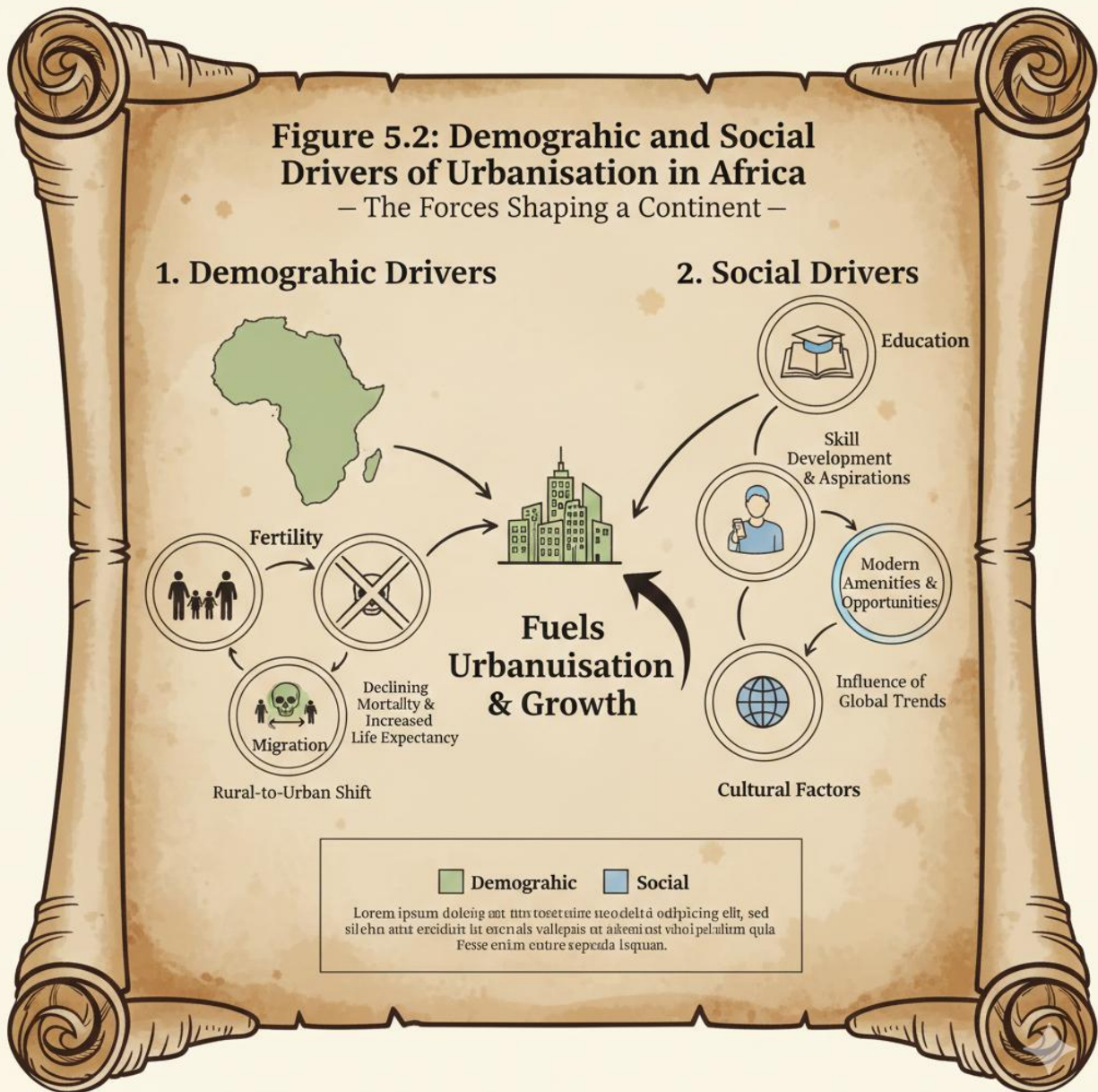


Diagram showing demographic and social factors influencing urbanisation (fertility, mortality, migration, education, lifestyle changes).

Figure 5.2: Demographic and social drivers of urbanisation in Africa

5.2.2 Economic and political drivers

Economic drivers include industrialisation, trade, and employment opportunities that attract rural populations to cities. Urban centres often provide better access to jobs, markets, and services, making them magnets for economic activity. **Political drivers** involve government policies, stability, and investment in infrastructure. For example, national development plans that prioritise urban growth can accelerate migration to cities.



Fill in the blank: Urban centres often provide better access to jobs, _____, and services, making them magnets for economic activity.

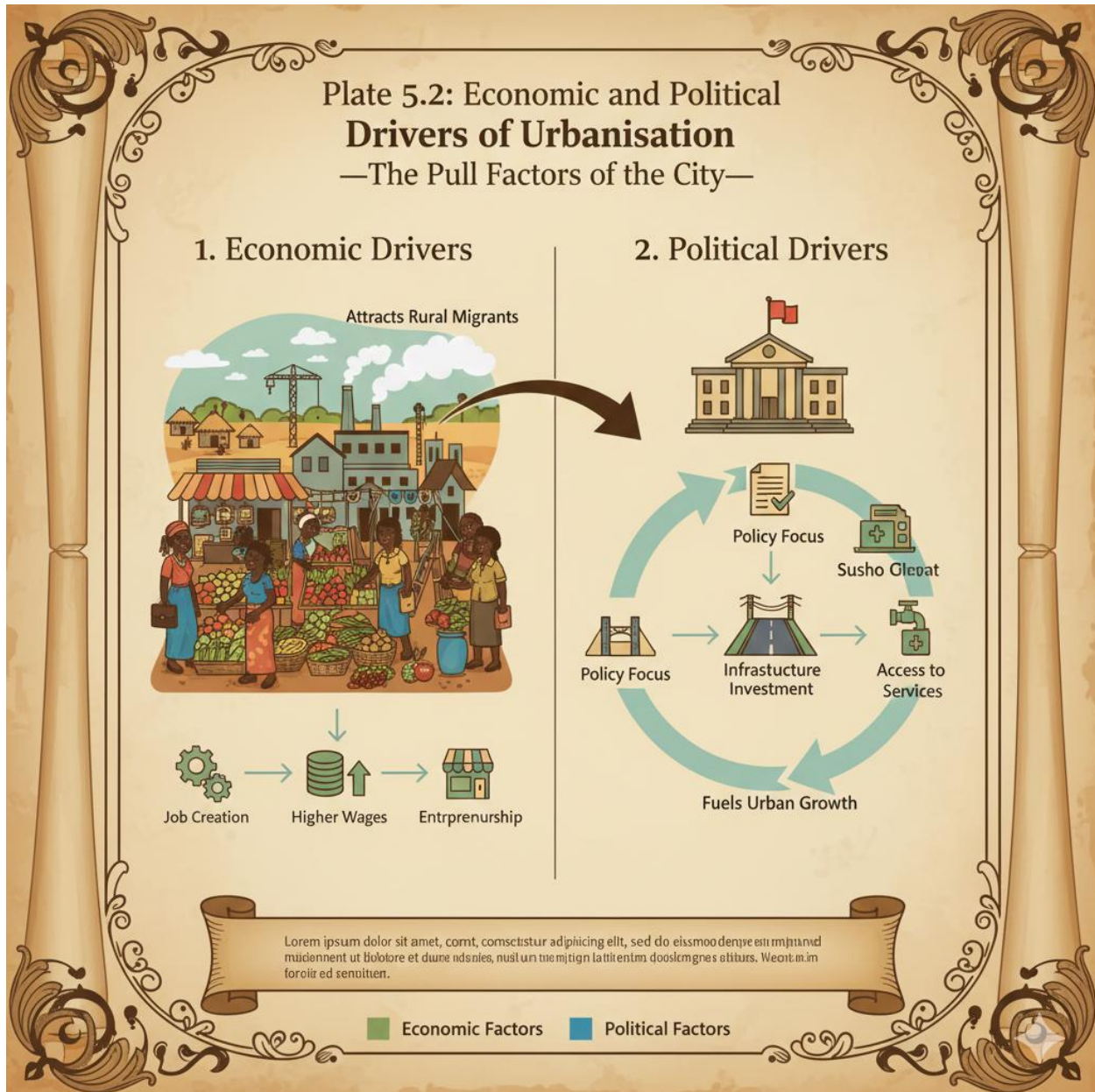


Image showing African city markets and industries attracting rural migrants.
Plate 5.2: Economic and political drivers of urbanisation

5.2.3 Regional variations in urbanisation trends

Urbanisation patterns differ across Africa. North Africa has relatively high urbanisation rates due to earlier industrialisation and stronger infrastructure, while Sub-Saharan Africa is experiencing rapid but uneven urban growth. Coastal cities often expand faster because of trade



opportunities, while inland regions may grow more slowly. These variations highlight the importance of context in understanding urbanisation.

Fill in the blank: Coastal cities often expand faster because of _____ opportunities, while inland regions may grow more slowly.

Region	Growth Characteristics	Infrastructure & Economy
North Africa	<i>Higher urbanization rates (often >60%); stabilized growth.</i>	<i>Stronger legacy infrastructure; more formalized housing markets and utility grids.</i>
Sub-Saharan Africa	<i>Rapid, volatile growth; dominated by "youth bulges."</i>	<i>High levels of informality; infrastructure often struggles to keep pace with migration.</i>
Coastal Cities	<i>Fast expansion; high population density (e.g., Lagos, Accra).</i>	<i>Driven by international trade, ports, and blue economy; prone to sea-level rise risks.</i>
Inland Regions	<i>Slower growth; secondary cities are becoming more prominent.</i>	<i>Limited connectivity; economy often tied to agriculture or mining logistics.</i>

Box 5.2: Regional variations in African urbanisation

North Africa: higher urbanisation rates, stronger infrastructure

Sub-Saharan Africa: rapid but uneven growth

Coastal cities: faster expansion due to trade

Inland regions: slower growth, limited infrastructure

Pilot questions 5.2

What are demographic factors influencing urbanisation in Africa?

State one social factor that encourages migration to cities.



Mention one economic driver of urbanisation.
Give an example of a political driver of urbanisation.
Why do coastal cities often expand faster than inland regions?

5.3 Impacts of Urbanisation on African Economies

Urbanisation has profound effects on African economies, shaping both opportunities and challenges. Cities act as engines of growth, providing spaces for innovation, trade, and industrialisation. At the same time, rapid and unplanned urbanisation can create economic and social pressures such as unemployment, informal settlements, and inequality. In this Part, we will examine both the positive and negative impacts, supported by case studies of selected African cities.

Fill in the blank: Cities act as engines of growth, providing spaces for innovation, _____, and industrialisation.

5.3.1 Positive impacts: industrialisation, labour markets, innovation

Urbanisation stimulates **industrialisation**, which is the process of developing industries within an economy. Concentration of people in cities creates demand for goods and services, encouraging businesses to expand. Urban centres also strengthen **labour markets**, offering diverse employment opportunities and attracting skilled workers. Furthermore, cities foster **innovation**, as proximity of people and institutions leads to new ideas, technologies, and entrepreneurial ventures.

Fill in the blank: Urban centres foster innovation because proximity of people and institutions leads to new _____ and technologies.



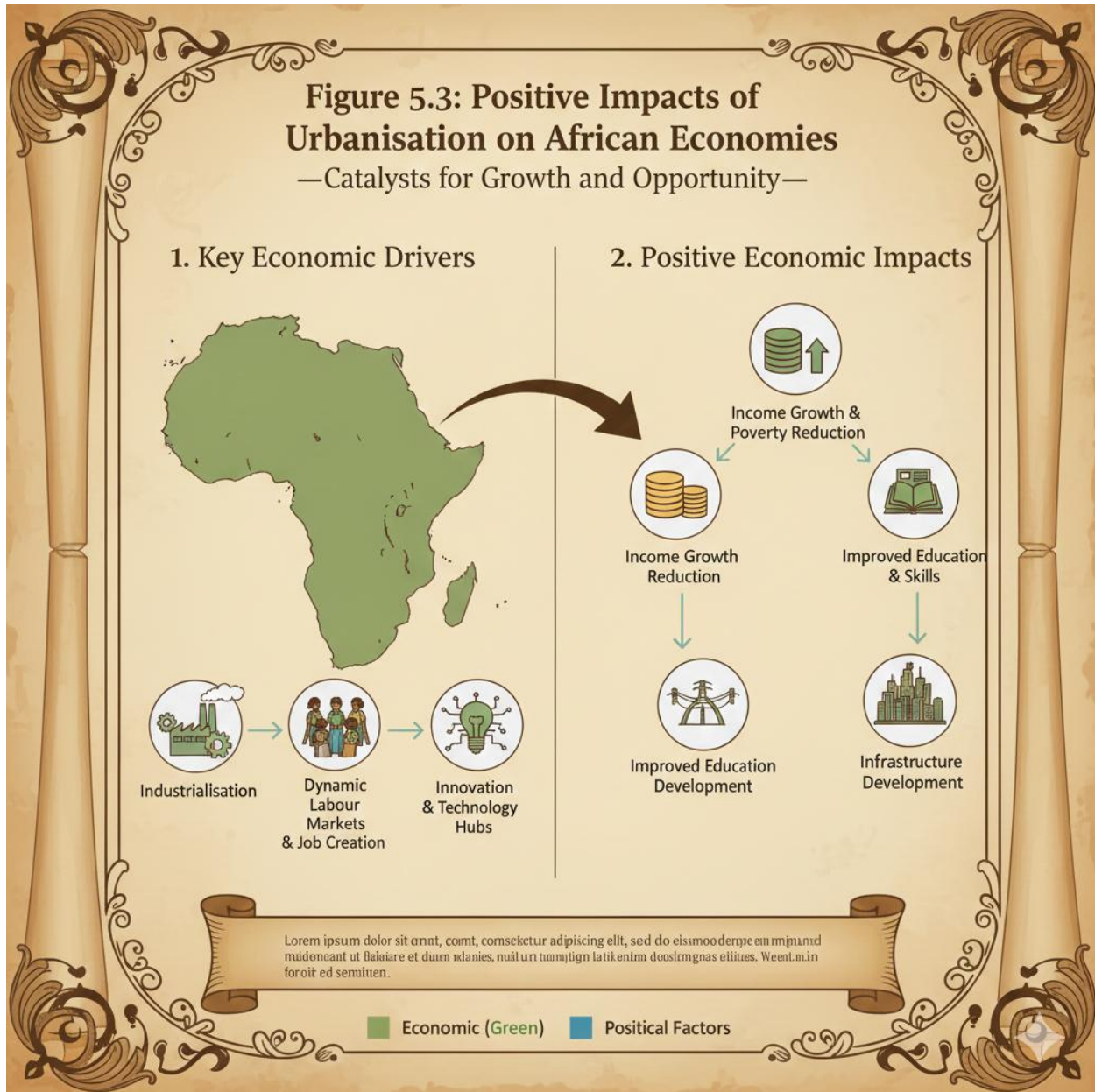


Diagram showing positive impacts of urbanisation: industrialisation, labour markets, and innovation.

Figure 5.3: Positive impacts of urbanisation on African economies

5.3.2 Negative impacts: unemployment, informal settlements, inequality

Rapid urbanisation often outpaces economic growth, leading to **unemployment**, especially among youth. Many people migrate to cities expecting jobs, but formal employment opportunities are limited. This contributes to the growth of **informal settlements**, which are unplanned residential areas lacking adequate housing and services. Urbanisation can also



deepen **inequality**, as wealth and opportunities are concentrated in certain groups while others remain excluded.

Fill in the blank: Rapid urbanisation often outpaces economic growth, leading to high levels of _____, especially among youth.



Image showing informal settlements in an African city, highlighting challenges of rapid urbanisation.

Plate 5.3: Negative impacts of urbanisation on African economies

5.3.3 Case studies of selected African cities

Case studies provide practical insights into how urbanisation affects economies. For example, Lagos in Nigeria demonstrates both opportunities and challenges: it is a hub of trade and



innovation but struggles with congestion and informal housing. Nairobi in Kenya shows how technology and entrepreneurship thrive in urban centres, while Johannesburg in South Africa illustrates the role of industrialisation in shaping economic growth. These examples highlight the diverse impacts of urbanisation across the continent.

Fill in the blank: Nairobi in Kenya shows how _____ and entrepreneurship thrive in urban centres.

City	Primary Role / Identity	Key Impacts & Challenges
Lagos, Nigeria	Commercial & Cultural Powerhouse: Africa's largest megacity and the engine of the Nigerian economy.	Impacts: Massive trade and innovation; Challenges: Severe traffic congestion, high sea-level flood risk, and 65% of residents living in informal housing (e.g., Makoko).
Nairobi, Kenya	"Silicon Savannah": A global hub for technology, fintech (M-Pesa), and international diplomacy.	Impacts: Leading entrepreneurship and e-governance; Challenges: Extreme spatial inequality between luxury districts and vast slums like Kibera; pressure on water security.
Johannesburg, SA	Industrial & Financial Giant: Africa's financial hub, built on a history of mining and industrialization.	Impacts: Highly developed infrastructure and stock exchange; Challenges: Legacy of spatial segregation (Apartheid-era planning) and persistent economic inequality.

Box 5.3: Case studies of urbanisation impacts in African cities

Lagos, Nigeria: hub of trade and innovation, but faces congestion and informal housing

Nairobi, Kenya: centre of technology and entrepreneurship

Johannesburg, South Africa: industrialisation shaping economic growth



Pilot questions 5.3

What is industrialisation, and how does urbanisation stimulate it?

State one way urbanisation strengthens labour markets.

Mention one negative impact of rapid urbanisation.

What are informal settlements?

Give one example of how urbanisation has impacted an African city.

5.4 Policy Responses and Planning Strategies

Urbanisation in Africa presents both opportunities and challenges, requiring effective **policy responses** and **planning strategies**. **Policy responses** are government-led measures designed to address demographic and economic changes, while **planning strategies** are structured approaches to guide urban growth sustainably. Together, they ensure that urbanisation contributes positively to economic development and social well-being.

Fill in the blank: Policy responses are government-led measures designed to address demographic and _____ changes.

5.4.1 National and regional policies on urban growth

Governments across Africa have introduced policies to manage urbanisation. These include housing programmes, infrastructure investment, and decentralisation strategies aimed at reducing pressure on major cities. Regional organisations such as the African Union also promote integrated urban development frameworks to encourage cooperation among countries.

Fill in the blank: Decentralisation strategies aim to reduce pressure on major _____ by promoting balanced growth.



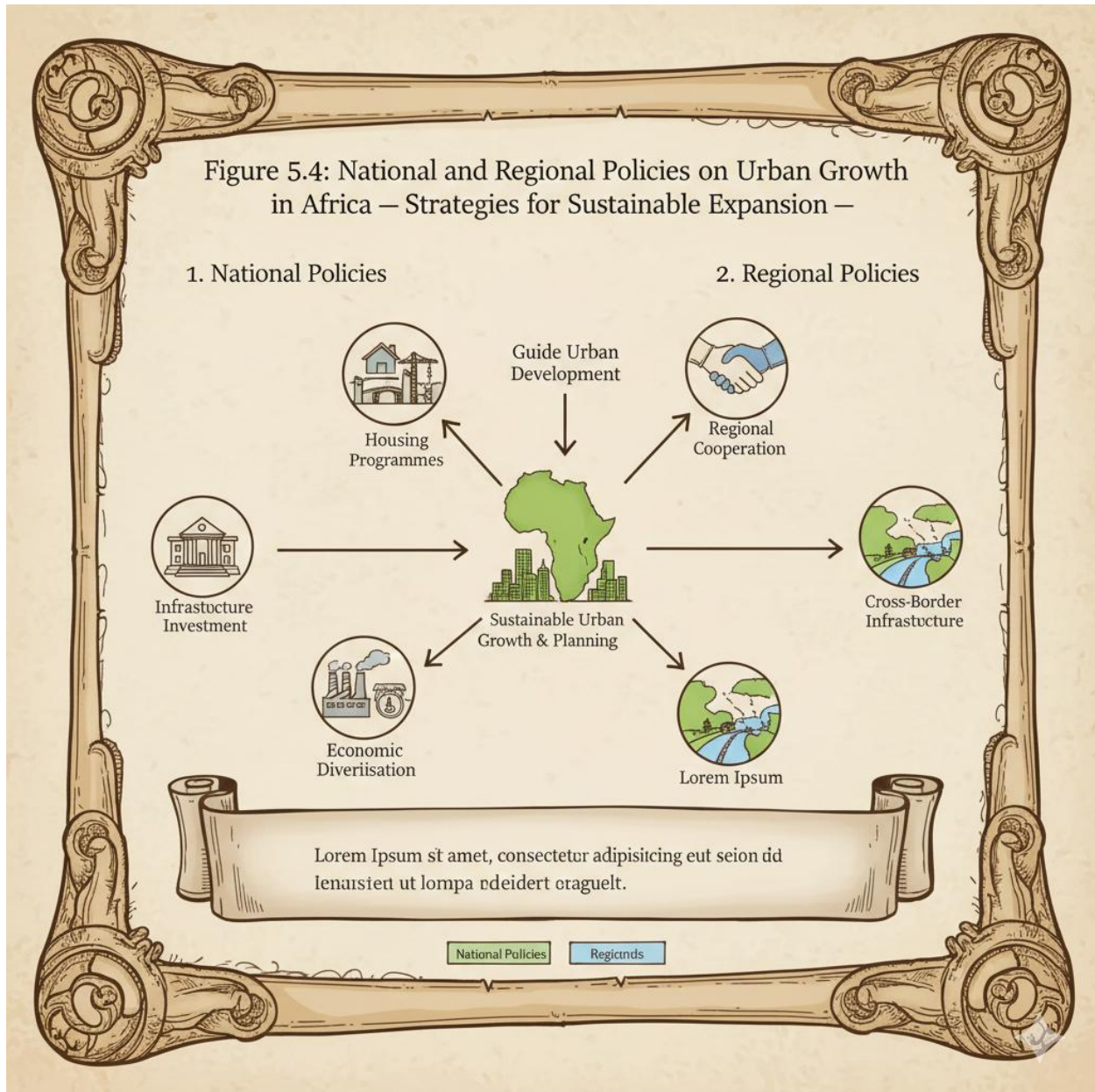


Diagram showing national and regional policies on urban growth (housing programmes, infrastructure investment, decentralisation, regional cooperation).

Figure 5.4: National and regional policies on urban growth

5.4.2 Sustainable urban development strategies

Sustainable urban development refers to planning approaches that balance economic growth, environmental protection, and social equity. Strategies include promoting renewable energy, improving public transport, and ensuring inclusive housing policies. These approaches aim to create cities that are resilient, environmentally friendly, and equitable for all residents.



Fill in the blank: Sustainable urban development balances economic growth, environmental protection, and social _____.



Image showing sustainable urban development strategies such as public transport, renewable energy, and inclusive housing.

Plate 5.4: Sustainable urban development strategies in African cities

5.4.3 Future prospects for African urbanisation and economic development



The future of African urbanisation depends on how effectively policies and strategies are implemented. If managed well, urbanisation can drive innovation, industrialisation, and inclusive growth. However, if left unchecked, it may worsen inequality and environmental degradation. Planners and policymakers must therefore adopt forward-looking approaches that anticipate demographic changes and integrate technology, sustainability, and inclusivity.

Fill in the blank: If managed well, urbanisation can drive innovation, industrialisation, and _____ growth.

Focus Area	Key Prospects and Challenges
Innovation & Industrialisation	<i>Cities are becoming hubs for the Fourth Industrial Revolution (4IR). The AfCFTA is projected to create a \$3.4 trillion market, turning urban centers into nodes for high-tech supply chains (e.g., EV batteries, mobile electronics) and manufacturing.</i>
Inclusive Growth	<i>Urbanization offers a "youth dividend." With 80% of population growth occurring in cities, urban centers provide the scale needed to deliver mass healthcare, digital education, and financial services more efficiently than rural settings.</i>
Inequality Risks	<i>Currently, over 60% of urban Africans live in informal settlements. Without intervention, the "urban illusion" persists: migrants move for opportunity but often face low-productivity informal jobs and a lack of social safety nets.</i>
Environmental Degradation	<i>Rapid sprawl threatens biodiversity and increases climate vulnerability. Over 60% of urban dwellers still rely on biomass for cooking, and unplanned growth in floodplains (e.g., Dar es Salaam) causes millions in annual damages.</i>



Sustainable Policy	Success requires a "three-pronged approach" : 1) Proactive urban legislation, 2) Integrated land-use planning to prevent slums, and 3) Fiscal autonomy for cities to capture land value and fund their own infrastructure.
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Box 5.4: Future prospects for African urbanisation and economic development

*Potential for innovation and industrialisation
 Opportunities for inclusive growth
 Risks of inequality and environmental degradation
 Need for forward-looking, sustainable policies*

Pilot questions 5.4

What are policy responses in the context of urbanisation?
 State one example of a national policy on urban growth.
 Define sustainable urban development.
 Mention one strategy that supports sustainable urban development.
 Why must policymakers adopt forward-looking approaches to urbanisation?

Series Summary

This Series has explored the relationship between urbanisation and economic development in Africa, highlighting why understanding this connection is vital for planners, policymakers, and learners of urban studies. Urbanisation is reshaping African societies, creating both opportunities for growth and challenges that require careful management. By examining its drivers, impacts, and policy responses, the Series has provided a foundation for appreciating how cities influence the continent's development trajectory.

We began with an introduction to urbanisation and economic development, before moving on to patterns and drivers such as demographic, social, economic, and political factors. We then analysed the impacts of urbanisation, considering both positive contributions like industrialisation and innovation, and negative effects such as unemployment and inequality, supported by case studies of African cities. Finally, we examined policy responses and planning strategies, focusing on sustainable approaches and future prospects. In line with the Series Learning Outcomes, you should now be able to define and explain key concepts, analyse drivers and impacts, evaluate policies, and propose strategies for managing urbanisation in ways that support inclusive and sustainable economic development across Africa.

Glossary of Terms



Economic development: The process by which nations improve the economic, social, and political well-being of their people, often measured by growth in income, education, healthcare, and infrastructure.

Industrialisation: The development of industries within an economy, usually involving the growth of manufacturing and production activities that stimulate employment and trade.

Informal settlements: Unplanned residential areas, often on the outskirts of cities, where housing and services are inadequate or lacking.

Innovation: The creation of new ideas, technologies, or methods, often stimulated by the concentration of people and institutions in urban centres.

Labour markets: The systems through which workers find jobs and employers recruit employees, strengthened by the diversity of opportunities in urban areas.

Policy responses: Government-led measures designed to address challenges and opportunities arising from demographic and economic changes, such as urban growth.

Regional variations: Differences in urbanisation patterns across Africa, influenced by factors such as industrialisation, infrastructure, and trade opportunities.

Resource allocation: The distribution of resources such as education, healthcare, housing, and employment opportunities across different groups in society.

Social factors: Influences such as education, lifestyle changes, and cultural shifts that encourage people to migrate to cities.

Sustainable urban development: Planning approaches that balance economic growth, environmental protection, and social equity to create resilient and inclusive cities.

Urbanisation: The increasing proportion of people living in towns and cities, often accompanied by changes in lifestyle, employment, and social organisation

Concept Check Questions [Series 5]

Objective Questions

Which of the following best describes urbanisation?

- a) The process of industrialisation
- b) The increasing proportion of people living in towns and cities
- c) The growth of agricultural production
- d) The distribution of resources across society

(Linked to SLO 5.1)

Which region of Africa has relatively higher urbanisation rates due to earlier industrialisation and stronger infrastructure?

- a) Sub-Saharan Africa
- b) North Africa
- c) East Africa
- d) West Africa

(Linked to SLO 5.5)

Which of the following is a negative impact of rapid urbanisation?

- a) Innovation
- b) Industrialisation



- c) Informal settlements
- d) Labour market diversification

(Linked to SLO 5.7)

Short-Answer Questions

Define economic development. (Linked to SLO 5.1)

State one historical factor that contributed to African urbanisation. (Linked to SLO 5.2)

Mention one demographic factor driving urbanisation in Africa. (Linked to SLO 5.3)

Give one example of an economic driver of urbanisation. (Linked to SLO 5.4)

What is meant by sustainable urban development? (Linked to SLO 5.10)

State one policy response to urban growth in Africa. (Linked to SLO 5.9)

Long-Answer Questions

Explain the positive impacts of urbanisation on African economies. (Linked to SLO 5.6)

Analyse the negative impacts of urbanisation, focusing on unemployment, informal settlements, and inequality. (Linked to SLO 5.7)

Evaluate the usefulness of case studies such as Lagos, Nairobi, and Johannesburg in understanding urbanisation impacts. (Linked to SLO 5.8)

Propose strategies for managing urbanisation in Africa to ensure inclusive and sustainable development. (Linked to SLO 5.10, SLO 5.11)

Answers to Concept Check Questions [Series 5]

Objective Questions

- b) The increasing proportion of people living in towns and cities
- b) North Africa
- c) Informal settlements

Short-Answer Questions

Economic development is the process by which nations improve the economic, social, and political well-being of their people.

Colonial policies that created administrative and commercial centres contributed to African urbanisation.

High fertility rates are a demographic factor driving urbanisation in Africa.

Industrialisation is an economic driver of urbanisation.

Sustainable urban development refers to planning approaches that balance economic growth, environmental protection, and social equity.

One policy response to urban growth is decentralisation strategies to reduce pressure on major cities.

Long-Answer Questions

Basic response: Urbanisation stimulates industrialisation, strengthens labour markets, and fosters innovation.



Value-added response: Outstanding learners may add that urbanisation also creates hubs of trade and entrepreneurship, enhances knowledge exchange, and supports regional integration.

Basic response: Rapid urbanisation can lead to unemployment, informal settlements, and inequality.

Value-added response: Outstanding learners may add that these challenges are compounded by weak infrastructure, poor governance, and environmental pressures, requiring targeted interventions.

Basic response: Case studies such as Lagos, Nairobi, and Johannesburg illustrate both opportunities and challenges of urbanisation.

Value-added response: Outstanding learners may add that these examples highlight diverse contexts, showing how technology, industrialisation, and trade shape urban growth differently across regions.

Basic response: Strategies include promoting sustainable housing, investing in infrastructure, and adopting inclusive policies.

Value-added response: Outstanding learners may add that strategies should integrate renewable energy, strengthen governance, encourage regional cooperation, and anticipate demographic changes to ensure resilience and equity.

Answers to Pilot Questions [Series 5]

Part 5.1 Introduction to urbanisation and economic development in Africa

Urbanisation is the increasing proportion of people living in towns and cities.

Economic development is the process by which nations improve the economic, social, and political well-being of their people.

Colonial policies that created administrative and commercial centres contributed to African urbanisation.

Urbanisation is central to Africa's development trajectory because cities are hubs of innovation, trade, and governance.

One challenge associated with African urbanisation is unemployment or the growth of informal settlements.

Part 5.2 Patterns and drivers of urbanisation in Africa

Demographic factors influencing urbanisation include fertility, mortality, and migration.

One social factor that encourages migration to cities is education.

An economic driver of urbanisation is industrialisation.

A political driver of urbanisation is government investment in infrastructure.

Coastal cities often expand faster than inland regions because of trade opportunities.

Part 5.3 Impacts of urbanisation on African economies



Industrialisation is the development of industries within an economy, and urbanisation stimulates it by creating demand for goods and services.
Urbanisation strengthens labour markets by offering diverse employment opportunities and attracting skilled workers.
One negative impact of rapid urbanisation is unemployment.
Informal settlements are unplanned residential areas lacking adequate housing and services.
An example of urbanisation's impact is Lagos, Nigeria, which is a hub of trade and innovation but struggles with congestion and informal housing.

Part 5.4 Policy responses and planning strategies

Policy responses are government-led measures designed to address challenges and opportunities arising from urban growth.
One example of a national policy on urban growth is decentralisation strategies to reduce pressure on major cities.
Sustainable urban development is planning that balances economic growth, environmental protection, and social equity.
One strategy that supports sustainable urban development is improving public transport.
Policymakers must adopt forward-looking approaches to urbanisation to anticipate demographic changes and ensure inclusive, sustainable growth.

References and Attributions [Series 5]

This section compiles references, suggested open educational resources (OERs), and attributions for illustrations used in **Series 5: Urbanisation and African Economic Development**. The referencing style applied here follows APA guidelines for clarity and consistency.

General References

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Illustrations and Attributions

Figure 5.1: Relationship between urbanisation and economic development

AI-generated prompt: "Create a labelled diagram showing the relationship between urbanisation and economic development in Africa."

Suggested OER search string: "urbanisation economic development Africa diagram OER."



Plate 5.1: Historical context of African urbanisation

AI-generated prompt: "Generate an image showing African city growth with colonial-era buildings and modern expansion."

Suggested OER search string: "African urbanisation historical colonial modern city OER image."

Box 5.1: Key relevance of urbanisation to Africa's development trajectory

AI-generated prompt: "Create a text box summarising the relevance of urbanisation to Africa's development trajectory."

Suggested OER search string: "urbanisation Africa development opportunities challenges OER summary."

Figure 5.2: Demographic and social drivers of urbanisation in Africa

AI-generated prompt: "Create a labelled diagram showing demographic and social factors driving urbanisation in Africa."

Suggested OER search string: "demographic social drivers urbanisation Africa diagram OER."

Plate 5.2: Economic and political drivers of urbanisation

AI-generated prompt: "Generate an image showing African city markets and industries attracting rural migrants."

Suggested OER search string: "economic political drivers urbanisation Africa OER image."

Box 5.2: Regional variations in African urbanisation

AI-generated prompt: "Create a text box summarising regional variations in African urbanisation."

Suggested OER search string: "regional variations urbanisation Africa OER summary."

Figure 5.3: Positive impacts of urbanisation on African economies

AI-generated prompt: "Create a labelled diagram showing industrialisation, labour markets, and innovation as positive impacts of urbanisation in Africa."

Suggested OER search string: "positive impacts urbanisation Africa industrialisation labour markets innovation diagram OER."

Plate 5.3: Negative impacts of urbanisation on African economies

AI-generated prompt: "Generate an image showing informal settlements in an African city as a result of rapid urbanisation."

Suggested OER search string: "informal settlements urbanisation Africa OER image."

Box 5.3: Case studies of urbanisation impacts in African cities

AI-generated prompt: "Create a text box summarising case studies of Lagos, Nairobi, and Johannesburg as examples of urbanisation impacts."

Suggested OER search string: "urbanisation impacts Lagos Nairobi Johannesburg Africa OER case studies."

Figure 5.4: National and regional policies on urban growth

AI-generated prompt: "Create a labelled diagram showing national and regional policies on urban growth in Africa."

Suggested OER search string: "national regional policies urban growth Africa diagram OER."

Plate 5.4: Sustainable urban development strategies in African cities

AI-generated prompt: "Generate an image showing sustainable urban development strategies such as public transport, renewable energy, and inclusive housing."

Suggested OER search string: "sustainable urban development Africa strategies OER image."

Box 5.4: Future prospects for African urbanisation and economic development



AI-generated prompt: "Create a text box summarising future prospects for African urbanisation and economic development."

Suggested OER search string: "future prospects urbanisation Africa economic development OER summary."

