

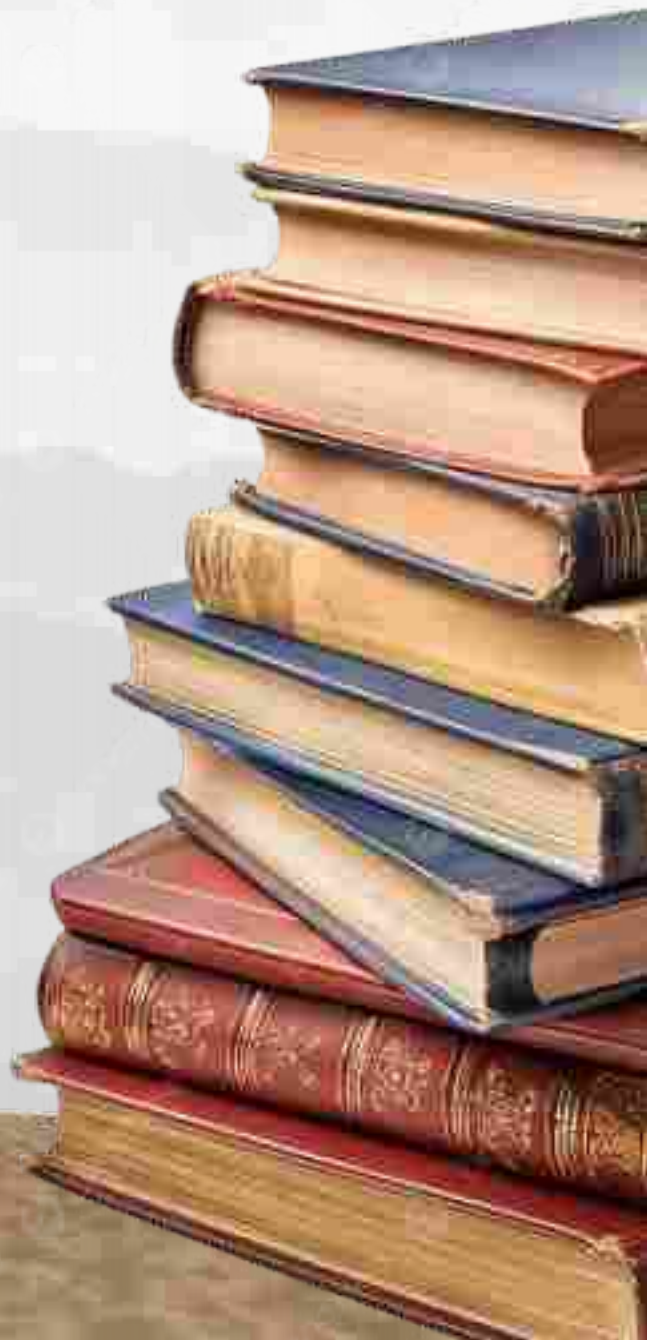


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PERSPECTIVE ON EDUCATION IN NIGERIA

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PERSPECTIVE ON EDUCATION IN NIGERIA

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CHAPTER TWO

**IMPACT OF RAPID GROWING POPULATION ON
THE INFRASTRUCTURE IN NIGERIA**

By

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ABSTRACT

Nigeria's rapid population growth—driven by high fertility and urban migration—places severe pressure on urban infrastructure. This chapter examines how expanding urban populations are reshaping housing, transport, healthcare, education, water and sanitation, and environmental systems in Nigerian cities. It synthesizes evidence on the scale and nature of the challenge, highlights human consequences (overcrowding, service shortages, informal settlement growth), and evaluates policy responses. The chapter closes with pragmatic strategies—planning and governance reforms, investments in affordable housing and public transport, water and sanitation scale-up, expanded health and education capacity, and family-planning and smart-city technologies—that can help align infrastructure provisioning with demographic realities.

Keywords: population growth, urbanization, infrastructure, housing, public services, Nigeria, urban planning

2.1. Introduction

Cities are often seen as places of opportunity, where people move in search of better jobs, education, healthcare, and overall quality of life. In Nigeria, this hope drives millions from rural communities into urban centers like Lagos, Abuja, Port Harcourt, and Kano. However, with Nigeria's population expanding at an extraordinary pace, these cities are under immense pressure.

The rapid urban population growth has outstripped the capacity of infrastructure that was never designed to carry such heavy demands.

Urban infrastructure—housing, roads, electricity, water supply, schools, hospitals, and waste management systems—forms the backbone of city life. When population growth exceeds the pace of infrastructure development, the result is visible in the daily struggles of city residents. Overcrowded buses, traffic gridlock, unreliable electricity, water shortages, overstretched hospitals, and congested classrooms have become a reality for millions of Nigerians living in cities. Informal settlements and slums continue to expand, as affordable housing remains out of reach for many (Ogunode & Ibrahim, 2024).

This situation has profound implications not only for the quality of life of individuals but also for national development. Poor infrastructure makes it difficult for businesses to thrive, increases health risks, reduces productivity, and fuels social tensions (Ogunode, & Ibrahim., 2024). For example, traffic congestion in Lagos wastes countless hours daily, while inadequate waste management in Port Harcourt contributes to pollution and environmental hazards. These challenges highlight the widening gap between Nigeria's population growth and its infrastructural capacity.

This chapter explores how the rapid growth of Nigeria's population is reshaping urban life, examining the specific pressures it places on housing, transportation, healthcare, education, water supply, and environmental sustainability. It also considers the human experiences behind these challenges—the overcrowded households, the frustrated commuters, the students learning in packed classrooms, and the patients waiting long hours in overstretched hospitals. Understanding these impacts is critical for developing policies and strategies that can bridge the gap between population growth and infrastructural development, ensuring that Nigeria's cities remain not only centers of opportunity but also livable spaces for future generations (World Bank, 2016; UN-Habitat, 2023).

2.2. Clarification of concepts

i. Concept of Rapid growing population

The term *rapid population growth* refers to an accelerated increase in the number of people within a given region over a specific period. Globally, population growth has risen sharply due to improved healthcare, reduced mortality, and technological advancement (United Nations, 2022). In Nigeria, the population growth rate of about 2.4 percent per year has created significant socio-economic challenges, including pressure on jobs, housing, and education (World Bank, 2023).

The global population has been rapidly growing in recent years, with an increase of over a billion people in just the last decade. This phenomenon has implications for various fields, including health, economy, and education. In terms of health, the rapid growth of the population has put a

strain on resources, leading to concerns about access to healthcare and the spread of diseases. Economically, the increase in population has created challenges in terms of providing enough jobs and resources for everyone. In the field of education, the growing population has increased the demand for educational institutions and resources, leading to issues of accessibility and quality. Overall, the rapid growth of the population is a complex issue with far-reaching effects, and further research and action are needed to address its impacts.

The rapid growth of the population has become a significant concern in recent years. This trend has led to various challenges, including strain on resources, overcrowding, and environmental degradation. To address this issue, researchers have conducted numerous studies to understand the causes and effects of population growth. Some of the factors contributing to the rapid increase in population include improvements in healthcare, technological advancements, and cultural beliefs.

ii. Concept of infrastructure

Infrastructural facilities refer to social capital within the school environment. They include school buildings/complexes such as classrooms, tables, exam hall, chairs, auditoria, desks, staff offices, seminar/conference/board rooms, laboratories, workshops, studios, farms, gymnasias, central libraries, specialized/professional libraries, faculty libraries, departmental libraries, etc., Institute/centers' specialized facilities e.g. ICT infrastructure, special laboratories, conference facilities, etc., and Boards e.g. interactive, magnetic, screen and chalk, etc., ICT that is computer laboratories and services, network connectivity, multi-media system, public address system, slide, and video projectors, and Ergonomics furnishing in laboratories, libraries, and lecture rooms/theaters, moot courts, and studios, etc (Ogunode & Agwor 2021; Alemu, (2018); Ayeni, & Nwaorgu, 2018). Lawinsider (2020), infrastructure facilities are defined as any works, structures, or improvements on land or water, excluding Ancillary Project Area Infrastructure. These facilities, whether directly or indirectly, provide services or other benefits to: (a) the general public; or (b) the Island community. This includes (c) offices, depots, and staff housing for or on behalf of the Commonwealth of Australia, the State, any local government, statutory authority, or government-owned corporation; (d) electricity generation, distribution, or transmission facilities; (e) public education facilities; (f) public health facilities; (g) police facilities; (h) emergency facilities; (i) transport facilities (such as pedestrian paths, cycleways, transfer facilities, freight storage and logistics areas, bus stops and layovers, ferry stops, taxi stops); (j) sewage pump stations and sewerage treatment facilities; (k) solid waste transfer and treatment facilities; (l) water supply pump stations, raw water storage, clear water storage, dams, weirs, bore field infrastructure; (m) items listed in section 24KA(2) of the Native Title Act to the extent that they are not Ancillary Project Area Infrastructure; and (n) any IBIS Store. However, this definition excludes (o) Social Housing. The importance of infrastructural facilities in educational institutions according to Ogunode and Agwor (2021) and Akomolafe, & Ibijola,(2014) include; it aids effective delivery of administrative functions in schools; it makes the delivery of services fast and reliable; it enables

teachers to deliver lessons fast; infrastructural facilities provide a conducive working environment for both teachers and students; infrastructural facilities enable learners to learn at ease and learn well; infrastructural facilities enable the teachers to teach well, prepare their lessons, and deliver them online (ICT).

2.3. Impact of Rapid growing population on urban infrastructure in Nigeria

Nigeria's urban areas are growing at one of the fastest rates in Africa, fueled by natural population increase and rural-to-urban migration. Cities such as Lagos, Abuja, Port Harcourt, and Kano are experiencing overwhelming population surges, and this has placed enormous pressure on existing infrastructure. The effects are visible across housing, transport, healthcare, education, water supply, and waste management.

i. Housing Shortages and Slum Proliferation

Rapid population growth has created a huge demand for housing that far exceeds supply. This has led to overcrowding. Rapid population growth in Nigeria is having a significant impact on its housing infrastructure. With the country's population projected to reach 440 million by 2050, there is a pressing need for adequate housing to accommodate the growing number of people. This rapid increase in population poses a challenge for the country's housing infrastructure, as it struggles to keep up with the demand. As a result, there is a shortage of affordable housing, leading to overcrowding and informal settlements in urban areas. To further exacerbate the issue, the lack of proper housing infrastructure also contributes to health and sanitation concerns in the country. With overcrowding and inadequate housing, there is a higher risk of disease outbreaks and poor living conditions. Additionally, the strain on infrastructure, such as water and electricity, also affects the overall living standards of the population. The rapid population growth in Nigeria has also caused an increase in urbanization, as more people move to cities in search of better opportunities. This puts further pressure on existing housing infrastructure, as well as transportation systems and other public services. The rapid population growth in Nigeria is causing significant challenges for the country's housing infrastructure. Immediate action needs to be taken to address the shortage of affordable housing and improve living conditions for the population. This will not only benefit the individuals but also contribute to the overall development and stability of the country.

ii. Transportation

The rapid population growth in Nigeria has had a significant impact on its transportation infrastructure. With the population expected to reach 400 million by 2050, the demand for efficient and reliable transportation has increased exponentially. This has resulted in a strain on the existing infrastructure and has led to congestion, delays, and increased travel time for commuters. The rise in population has also led to a rapid increase in urbanization, with more people moving to cities in search of better opportunities. This, in turn, has put pressure on the transportation systems in urban

areas, where the majority of the population resides. The limited capacity of existing infrastructure has resulted in overcrowding and has made it difficult for people to commute to work or access essential services. The increase in population has also resulted in a rise in the number of vehicles on the road, leading to traffic congestion and a decline in air quality. This not only affects the health and well-being of citizens but also poses a challenge for the government to maintain and expand the transportation infrastructure to keep up with the growing population.

iii. Healthcare

The rapid population growth in Nigeria has had a profound impact on the country's healthcare infrastructure. With an estimated population increase of over 20 million people in the past decade, the demand for healthcare services has skyrocketed. This has resulted in overcrowding in hospitals and long waiting periods for patients seeking medical attention. Additionally, the strain on healthcare infrastructure has led to inadequate resources and understaffing, making it challenging for medical professionals to provide quality care. Furthermore, the surge in population has also caused a rise in diseases and health conditions, further burdening the already struggling healthcare system. It is evident that rapid population growth has significantly impacted the healthcare infrastructure in Nigeria, and urgent measures must be taken to address this issue."

iv. Education

Population growth has been a major concern in Nigeria, with a rapidly increasing population posing numerous challenges for the country's infrastructure. In particular, the education infrastructure has been greatly affected by this population growth. This tool aims to generate academic abstracts on the impact of rapid population growth on education infrastructure in Nigeria. The growing population has put a strain on the already limited resources in the education sector. With more children to accommodate, schools are facing overcrowding, lack of facilities and resources, and inadequate funding. This has resulted in a decline in the quality of education, with overcrowded classrooms and limited resources hindering effective teaching and learning. Moreover, the rapid population growth has also led to a shortage of qualified teachers in Nigeria. With a growing number of students to cater to, there is a high demand for teachers, but the supply is insufficient. This has resulted in a decrease in the quality of teaching, further impacting the education infrastructure in Nigeria. The impact of rapid population growth on education infrastructure goes beyond overcrowding and shortage of resources. It has also contributed to the widening of the education gap between urban and rural areas. As the population continues to grow, there is a higher concentration of schools in urban areas, leading to a lack of educational opportunities for children in rural areas. The increasing population has also brought about challenges in terms of access to education. With a larger number of children to cater to, there is a need for more schools and educational facilities. However, due to limited resources and inadequate funding, many children, especially those in rural areas, are unable to access education.

v. Water supply

The rapid population growth in Nigeria has a significant impact on the country's water supply infrastructure. (Nigerian Bureau of Statistics, 2021). As the population increases, the demand for clean and accessible water also increases, putting a strain on the existing infrastructure. This can lead to issues such as water scarcity, inadequate distribution, and low-quality water supply. One of the major challenges posed by population growth is the strain on the existing water supply systems. With more people relying on the same infrastructure, the system becomes overloaded, leading to issues such as frequent water shortages and reduced water pressure. This is particularly problematic in urban areas, where the population growth is highest. The rapid population growth has also put pressure on the management and maintenance of water supply infrastructure in Nigeria. As the population continues to grow, it becomes increasingly difficult for the government to keep up with the maintenance and expansion of water supply systems. This can result in a decrease in the quality of water supply and pose health risks to the population. The rapid population growth has also led to the encroachment and pollution of water sources. As more people move into urban areas, they often settle in informal settlements, which lack proper sanitation and waste management systems. This results in the contamination of water sources, making them unsafe for consumption.

vi. Environmental sustainability

Population pressure contributes to environmental degradation, deforestation, and pollution. The increased demand for land and energy intensifies waste generation and carbon emissions, threatening long-term sustainability (Ezeh et al., 2020).

Rapid population growth in Nigeria has had a profound impact on the country's environmental sustainability infrastructure. This has been driven by a multitude of factors, including urbanization, industrialization, and increased resource consumption. As the population continues to grow at an alarming rate, strains on the environment and natural resources are becoming more evident. Another significant effect of rapid population growth on environmental sustainability infrastructure in Nigeria is climate change. As the population grows, so does the carbon footprint, leading to increased greenhouse gas emissions. This has resulted in extreme weather events, including floods, droughts, and heatwaves, which further strain the country's already struggling infrastructure. One of the major issues caused by rapid population growth is the increased demand for energy and resources. This leads to the exploitation of natural resources such as forests, leading to deforestation and land degradation. As a result, there is a decline in the quality of air, water, and soil, negatively impacting both human health and biodiversity. The rapid population growth has also put a strain on the existing infrastructure, which is unable to keep up with the demand. For example, the increased population in urban areas has led to overcrowding, causing issues with

waste management, water supply, and sanitation. This not only has a direct impact on the environment but also poses health risks and can lead to the spread of diseases.

2.4. Strategies to address the problem of Rapid growing population on urban infrastructure in Nigeria

The following are the strategies

i. Strengthen Urban Planning and Management

Governments should invest in modern urban planning systems that anticipate future growth and ensure balanced development of housing, transport, healthcare, and utilities. Enforcing zoning laws and reducing unregulated settlements will help prevent chaotic urban sprawl.

ii. Expand Affordable Housing Programs

Public-private partnerships should be encouraged to deliver affordable housing solutions. Mortgage schemes and rent-to-own programs can make home ownership more accessible to middle- and low-income earners.

iii. Improve Transportation Infrastructure

Expanding road networks, introducing mass transit systems (light rail, buses), and encouraging non-motorized transport can reduce congestion. Maintenance of existing roads should be prioritized alongside new projects. (Adeleke & Akinola, 2021).

iv. Enhance Healthcare and Education Facilities

Investments in more hospitals, clinics, and schools are essential to match the pace of population growth. Training and recruitment of additional teachers and healthcare workers will reduce the burden on overstretched staff (World Bank, 2023).

v. Increase Investment in Water Supply, Sanitation, and Waste Management

Expanding access to clean water and efficient waste disposal systems will reduce health risks associated with urban overcrowding. Modern recycling and sewage treatment facilities should be integrated into city planning.

vi. Promote Family Planning and Population Control Measures

Nationwide awareness campaigns on family planning and reproductive health can help slow uncontrolled population growth. Providing affordable contraceptives and health services will empower families to make informed decisions (UNFPA, 2022).

vii. Leverage Technology and Smart City Solutions

Smart technologies for traffic management, energy distribution, and e-governance can make cities more efficient. Data-driven planning will ensure that infrastructure development aligns with real population needs.

viii. Strengthen Governance and Accountability

Transparent allocation of resources and strict monitoring of urban development projects will reduce corruption and ensure infrastructure projects are delivered effectively.

Conclusion

Nigeria's rapid population growth has placed enormous strain on urban infrastructure, creating visible gaps in housing, transportation, healthcare, education, water supply, and waste management. Cities like Lagos, Abuja, Kano, and Port Harcourt face daily struggles with overcrowded roads, inadequate housing, and overstretched public services. What should be centers of opportunity often become zones of frustration, where infrastructure development fails to keep pace with rising demand. Beyond the physical strain, this crisis also affects the quality of life, economic productivity, and social stability of urban residents. If left unchecked, the mismatch between population growth and infrastructure capacity could worsen poverty, increase inequality, and limit Nigeria's overall development.

Nigeria's rapid urban population growth is both a challenge and an opportunity. While it threatens to overwhelm existing infrastructure, it also provides the drive for innovation, investment, and reforms. With the right mix of planning, investment, and policy reforms, Nigerian cities can transform population growth from a burden into a catalyst for sustainable urban development.

Revise Questions References

- 1) What is rapid growing population?
- 2) Define infrastructure facilities
- 3) Discuss five impacts of rapid growing population on urban infrastructure in Nigeria
- 4) Outline five strategies to address the problem of rapid growing population in Nigeria

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