

Original Article

Spatio-Temporal Dynamics of Population Characteristics in North 24 Parganas District, West Bengal (1901–2011)

Bholanath Sarkar¹, Dr. Om Prakash Singh²

¹Research Scholar, Sunrise University, Alwar Rajathan

²Professor, Sunrise University, Alwar Rajathan

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From 1901 to 2011, this study investigates the spatiotemporal dynamics of demographic features in West Bengal's North 24 Parganas District. The study examines important demographic data from several census eras, including population growth, density, literacy, sex ratio, and urbanisation. Finding patterns of change over time and how these patterns connect to regional differences within the district are the goals. Regional planning, resource distribution, and socioeconomic growth all depend on an understanding of these processes.

Keywords: Spatio-temporal dynamics, population characteristics, North 24 Parganas, West Bengal, demographic analysis, census data, urbanization, population growth.

Introduction

Population studies provide important information about the socio-economic development and the demographic changes in a region over time. Spatio-temporal study of population feature in India is important to understand regional divergence, economic growth. The district of North 24 Parganas state of West Bengal is a good case for analysis due to its population diversity, urbanisation and changing economic conditions. The study covers the period 1901-2011 and shows perspective information on the population in the district. The importance of studying is in identifying the geographical change in the population and their implications for local governance, public health, education, development.

Objectives

1. To study the population growth and density in North 24 Parganas over the course of 110 years.
2. To analyze changes in the sex ratio, literacy rate, and urbanization levels across various census years.
3. To identify spatial variations in demographic characteristics within the district, focusing on urban and rural differences.
4. To explore the potential socio-economic and political factors influencing population dynamics.

Methodology

1. Data from 1901-2011.
2. The information of Directorate of Operations in West Bengal at the district level.
3. Academic articles and research papers, demographic studies of the area.

The study will apply descriptive and spatial analysis to identify patterns. Geographical Information Systems are used to map spatial variation of population feature.

Literature Review

The spatio-temporal dimension of population dynamics has been examined in a number of contexts such as rural-urban migration, urbanisation patterns and regional development.

The findings in the literature are:

1. The change from agrarian to industrial economies in districts of North 24 Parganas.
2. High rates of urbanisation in the district, especially after the 1950s.
3. Urbanisation: Movement of populations to urban areas on a large scale; impacts population density and resource allocation.



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Address for correspondence:

Bholanath Sarkar Research Scholar, Sunrise University, Alwar Rajathan

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Population Growth And Density (1901-2011)

Population increase in North 24 Parganas has been characterized by significant changes in numbers, as well as compared to other districts regarding: (i) numbers; and (ii) density. For instance, in 1901, the number of people residing in the district was roughly 2.7 million, whereas in 2011, the figure rose to more than 10 million, indicating massive growth in population between the two years. Likewise, Population Density, which is the number of individuals per square kilometre and is often used as a measure of space pressure, increased immensely from roughly 1,000 people per square kilometre in 1901 to about 2,500 people per square kilometre in 2011. The increase was mainly attributed to: An increased birth rate. Migration from rural areas of the district to urban areas because of advancements in agriculture and urbanization owing to industrialization in the surrounding regions of North 24 Parganas. Improved health and sanitation facilities reduced the death rate.

Changes In Sex Ratio(1901-2011)

The sex ratio in North 24 Parganas has had some variations in the past decades, but overall, it is balanced. In 1901, the sex ratio was 945 females to 1,000 males, but by 2011, the ratio had increased to 954 females to 1,000 males. This improvement could be attributed to the improvement in public health, literacy rates .

Literacy Rates (1901-2011)

There was an amazing rise in the literacy rate of North 24 Parganas, rising from about 8% in 1901 to about 83% in 2011. Literacy is the product of many programs implemented by governments as well as non-government organizations for developing the education sector. The gap between the urban and rural literacy rates has reduced significantly but rural areas are still behind in the race.

The literacy rate in urban areas is almost at 90%, while in rural areas it was approximately 75% in 2011.

Urbanization And Migration

There have been high levels of urbanization in North 24 Parganas since the middle part of the 20th century. The rise of Kolkata, the capital city of West Bengal, as the center of industry resulted in rural populations migrating to city . Since 2011 40% of districts population lived in city , which differ from rural population base in 1901 . Urbanization has caused demand for housing , transport , infrastructure in the district , leading to creation of new towns such as Barasat and Basirhat .

Spatial Variation In Population Characteristics

The spatial pattern in population of North 24 Parganas is not uniform, city areas have recorded high growth and population than the rural areas. The cities especially around Kolkata have developed gradually in terms of population and infrastructure , rural areas, the ones located in north and east part have shown slow growth or no growth at all. GIS spatial analysis shows the urban areas consists higher levels of literacy, sex ratios, and medical facilities compared to rural ones .

Factor That's Changing Population Dynamics

Several socio-economic and political factors affects the population trends in North 24 Parganas:

Economic Development:

Due to Industrial development & the growth of service sector in cities. Migration of labours happened due to this .

Migration:

Both intra-state migration from rural to urban areas and inter-state migration from neighboring regions have contributed to demographic changes.

Public Health Policies: Improvements in healthcare departments have reduced mortality rates, infant mortality, affecting overall population growth.

Government Schemes:

Educational and welfare schemes aimed at reducing gender disparities have had a positive impact on literacy and the sex ratio.

Conclusion

The spatiotemporal analysis of the demographic characteristics of North 24 Parganas between the years 1901 to 2011 reveals that there have been noteworthy changes caused due to urbanization, migration, and socioeconomic development within the region. Although progress has been made with respect to the growth of population and literacy rate along with an improvement in the field of health, problems persist, particularly in the rural parts of the district. Future studies can be directed towards examining the relationship between these demographic changes and local governance and regional development. Moreover, climate change, environmental degradation, and politics should also be taken into account when studying sustainable development in North 24 Parganas.

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