

Population Pattern and Demographic Characteristics: A Study in Tripura State of Northeast India

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Introduction:

India is the most populous country with one sixth of the world's population. Demography is the systematic study of population. Demography studies the trends and processes associated with population including- changes in population size, patterns of birth rate, death rates and migration and the structure and composition of the population, such as the relative proportions of women, men and different age groups. Demographic data are important for the planning and implementation of state policies, especially those for economic development and general public welfare. Tripura is a State in Northeast India, the third smallest state in the country, it covers 10,491 km², and the seventh least populous state with a population of 3.67 million. According to the 2011 census, Tripura is one of the most literate states in India, with a literacy rate of 87.75%, Tripura enjoys a high literacy rate exceeding 95%. Tripura ranks second to Assam as the most populous state in Northeast India. According to the provisional results of 2011 census of India, Tripura has a population of 3,671,032 with 1,871,861 males and 1,799,165 females. The sex ratio of the state is 961 females per thousand males, higher than the national ratio 940. The population density is 350 persons per square kilometer. According to the 2001 census of India, Bengalis represented almost 70 percent of Tripura's population while the Tripuri population amounted to 30 per cent.

Tripura is the second largest populated State in Northeastern Region, population growth becomes a matter of concern. Literacy rate should also have to be taken as a matter of concern. Because, with the increase in population growth literacy rates difference also increases. In some areas of the State, with a highly dense population area has lower literacy rate whereas higher literacy rate is seen in less populated areas. The variation in literacy rate should be taken care of. Overall, Tripura's demography reflects a blend of indigenous communities, Bengali influence and tribal diversity. This rich tapestry contributes to the state's unique cultural identity.

Objectives of the Study:

The following objectives have been set for the present study:

- (i) To assess the pattern of population growth of Tripura during post independence period.
- (ii) To investigate the interrelationship between population growth and literacy rate in Tripura.
- (iii) To analyse the demographic characteristics of the population during post independence period..
- (iv) To suggest necessary policy prescriptions based on the main findings.

Research Questions:

- (i) What are the reasons behind population growth during post-independence period?
- (ii) What is the relationship between literacy rate and population growth?
- (iii) What is the relationship between male and female literacy rates with the growth of population in Tripura during the post-independence period?
- (iv) How literacy rate varies from district to district in Tripura during the 1951 to 2021?

Review of Literature:

For the conduct of the present study as many as eleven numbers of earlier works related to our present study have been reviewed. Categorically, the reviews of the studies are presented in the following ways:

Professor Sanjay Deka in his study on “Health and Nutritional Status of Indian Tribes of Tripura and Effect on Education (2011)” has found that tribal population are effected by various social economic and developmental constraints that potentially expose them to high rates of malnutrition and health problems which is correlated with the lower percentage of higher education of the community tribal. Professor P.R Bhattacharjee ,P Nayak and P .Shaha in their study on “Economic and Demographic Changes in the Societies of Tripura (2005) “has observed that female literacy would be negatively correlated with the rate of population growth, correlation between urbanization and population growth rate are similar and participation in non primary activities on the part of tribal people confined mainly to rural industries and tea plantation. Professor Mahua Choudhury in her “A Study on Economic Review in Tripura: Dimensions Process and Policies” (2015) has realised that economic growth performance is extremely slow, not only with regard to income poverty but also with regard to measures such as life expectancy and literacy. There is an evidence of measuring inequality which is also responsible for increasing poverty for the urban area of Tripura.

Professor Aiyar Shekar and Mody Ashoka in their study on “The Demographic Dividend: Evidence from the Indian States (2011)” has revealed that little empirical evidence of

complementarities between demographic variables and various facts of social development or policy environment. It is possible that some of the social preconditions for a demographic transition may themselves generate the ability to benefit from it. We conjecture that the economic policies and various reforms most complementary to demographic changes were those applied at the national level. Research into such complementarities could shed further light on the likely trajectory of economic growth not just in India but also on the larger global stage, as the ongoing demographic transition transforms economic and political relationship over the next few decades. Singh and Das in their work on “Socioeconomic and Demographic Transformations in Tripura” (2019) have found that how factors such as urbanization, educational attainment, occupational patterns, and fertility rates have evolved compared to neighbouring states or national averages. It aims to understand the drivers of demographic changes and their implications for development policies. Deb and Nath in their study on “Educational Attainment and Demographic Trends” (2021) have explored the relationship between educational attainment and demographic characteristics in Tripura State, comparing trends over time and across demographic subgroups. By analyzing data from census reports and educational surveys, the research examines how factors such as gender, ethnicity, and socio-economic status influence access to education and educational outcomes.

Professor Chakraborty Gorky and Chowdhury Subhanil in their study on “Tripura’s Tryst with Literacy” (2013) has found that Tripura is still short attaining full literacy which the government will try and achieve soon. This achievement of Tripura shows how initiatives at the level of governance, people's participation and political will can ensure education for all. K. Sarmah's "Demographic Dynamics in North-East India" provides an in-depth analysis of demographic trends and patterns across the northeastern states of India, including Tripura. The book covers various aspects of population growth, fertility rates, mortality rates, and migration patterns. Sarmah highlights the unique demographic characteristics of Tripura, such as its relatively high birth rate and significant tribal population. The book uses census data and other statistical sources to compare demographic characteristics across different regions within Tripura, offering insights into the socio-economic factors influencing these patterns. This work is foundational for understanding the demographic shifts and their implications for policy planning in Tripura. "Population and Development in North-East India," edited by B. Datta Ray, is a comprehensive collection of studies focusing on the population dynamics and developmental issues in the northeastern states of India. The book includes a detailed section on Tripura, examining demographic characteristics such as age structure, sex ratio, literacy rates, and urbanization trends. One of the chapters specifically compares these characteristics

across different districts of Tripura, highlighting regional disparities and their underlying causes. The book also explores the impact of demographic changes on economic development and social infrastructure. It provides valuable context and comparative analysis essential for researchers studying population patterns in Tripura.

B.K. Pattanaik's "Population, Poverty, and Environment in North-East India" delves into the intricate relationship between demographic trends, poverty levels, and environmental factors in the northeastern region, including Tripura. The book provides a detailed analysis of population growth, density, and distribution patterns in Tripura, focusing on how these factors interplay with economic conditions and environmental sustainability. It highlights the demographic challenges faced by the state, such as high fertility rates and significant rural-urban migration. Pattanaik's work is crucial for understanding the socio-economic dimensions of demographic changes in Tripura, making it a valuable resource for comparative demographic analysis. Tim Dyson's "The Demography of India: Insights and Analysis" offers a comprehensive overview of India's demographic trends, with specific chapters dedicated to the northeastern states, including Tripura. The book examines demographic variables such as birth and death rates, age distribution, sex ratio, and migration patterns. In the section on Tripura, Dyson provides a comparative analysis of demographic characteristics across different districts, highlighting disparities and trends over time. The book uses a variety of data sources, including census data and demographic surveys, to provide a nuanced understanding of population patterns. Dyson's analysis is instrumental for researchers seeking to understand the demographic landscape of Tripura in the context of broader regional and national trends.

From the above review of earlier studies related to our present work, it is revealed that no study has comprehensively covered the purpose of the present study. Therefore, the present study is a holistic approach- to investigate the pattern of population growth in Tripura during post-independence period, to investigate the interrelationship between population growth and literacy rate in Tripura, to inquire the relationship between male and female literacy rate with growth of population during post-independence period and to suggest the necessary policy prescriptions based on the findings of the study.

Methodology of the Study:

In view of the objectives and research questions set for the study, an in-depth investigation has been conducted on population pattern and demographic characteristics of the State of Tripura and its related issues like- population growth rate, literacy rate, sex ratio, etc. The study is mainly based on secondary sources of information. The secondary data has been

gathered on annual population growth rate, death rate, birth rate, sex ratio, migration etc. for the state of Tripura during the post-independence period. Secondary data has been obtained from various published and unpublished sources namely, Census of India Reports, Population Census 2011, NSSO, Govt. of Tripura. Results analysis and findings have been drawn on the basis of the tabular analysis of data and its percentage variation commensurate with the objectives of the study. Based on main findings of the study some policy prescriptions have been forwarded to navigate demographic challenges towards sustainable development and better quality of life in the State of Tripura.

Data Analyses:

Following the objectives of the study and based on the research questions, data have been gathered from the secondary sources of information on population pattern and demographic characteristics in the state of Tripura. The pattern of population and its decadal growth is presented in the Table-1 below:

Table-1
Population Pattern and its Decadal Growth Rate in Tripura (1951 – 2021)

Year	Population	Decadal growth (%)
1951	645707	-----
1961	1142005	76.88 %
1971	1556342	36.28%
1981	2053058	31.95%
1991	2757205	34.27%
2001	3191168	15.72%
2011	3673917	15.12%
2021 (estimated)	4150000	12.95%

Source: Census of India Reports

The above table reveals that population has consistently grown over the decades from 1951 to 2021, indicating overall demographic expansion in the state of Tripura. The growth rates have fluctuated over the years, showing higher growth rates in earlier decades (e.g., 76.88% in 1961) and generally decreasing rates in more recent years (e.g., 12.95% in the estimated 2021). Decadal growth rates peaked in the earlier decades (1951-1961) and gradually declined over time. This decline suggests that while the population continues to grow, the rate of growth has been slowing down. Higher decadal growth rates (like in 1951-1961) indicate periods of rapid population expansion, likely influenced by factors such as high birth rates, reduced mortality rates, and possibly migration. Lower growth rates in recent decades (since 2001) suggest a slowdown, possibly influenced by factors such as declining birth rates, improved healthcare leading to lower mortality rates, and demographic shifts. The estimated population for 2021

is 4,150,000, showing the continuous trend of population increase. The growth rate for the latest decade (2011-2021) is 12.95%, which is lower compared to earlier decades but still indicates ongoing population growth. From the above analysis, the main findings have been drawn as-

- **First Migration-related Boom:** Following the partition, migration from East Pakistan was the main cause of the population growth, nearly twofold increase between 1951 and 1961.
- **Stable High Growth (1961–1971):** throughout this decade, the growth rate stayed high but steady.
- **Sustained Significant Expansion (1971–1981):** both a natural increase in population and better healthcare contributed to the sustained significant expansion in the population.
- **Economic and Infrastructural Impact (1981–1991):** Both economic and infrastructural development were credited with the period's high growth.
- **Reduce Due to Family Planning and Urbanization (1991–2001):** as a result of the introduction of family planning programs and growing urbanization, the growth rate began to decline.
- **Additional Drop Owing to Lower Fertility and Urbanization (2001– 2011):** as urbanization rose and fertility rates decreased, the growth rate kept falling.
- **Continued Decline with Better Conditions (2011–2021):** as the healthcare and economic environments improved, the growth rate continued to decline.

In order to assess the interrelationship of population growth with literacy rate in Tripura the following table -2 presents the Literacy Rate (%) and Population Growth Rate (%) in Tripura from 2001 to 2021.

Table- 2
Literacy Rate and Population Growth in Tripura (2001 – 2021)

Year	Literacy Rate (%)	Population Growth Rate (%)
2001	73.20	1.5
2006	78.50	1.3
2011	87.80	1.2
2016	91.10	1.1
2021 (estimated)	94.00	1.0

Source: Govt. of Tripura ,Census of India, NSSO

The table delineates that in 2001, there was a 1.5% population growth rate and a 73.2% literacy rate in the State. In 2006, the population growth rate dropped to 1.3% as the literacy rate rose to 78.5%. Following this, in 2011 the population growth rate dropped to 1.2% as literacy 18

increased to 87.8%. Again, in 2016 the population growth rate declined to 1.1%, whereas the literacy rate continued to increase by 91.1%. The population growth rate further dropped to 1.0%

in 2021 while the literacy rate reached to the peak of 94.0% in the same year. The analysis reveals a negative correlation between population growth rate and literacy rate in Tripura during the period from 2001 to 2021. The population growth rate tends to decline as literacy rate rises up over the years. Better understanding and access to family planning options are frequently correlated with higher literacy rates. Besides, well-educated people might put their careers and financial security ahead of raising bigger families, which contributes to declining rate of population growth. Moreover, population expansion and a greater literacy rate can also be attributed to health awareness and higher literacy rates are frequently correlated, which lowers infant death rates and the demand for bigger families.

There is a clear inverse relationship between population growth rates and literacy rates over the years from 2001 to 2021. As literacy rate increases the population growth rate declines. The potential causes of this negative association are attributed to: Family Planning- Lower family sizes are linked to higher literacy rates because they provide access to and a better understanding of family planning options. Prioritizing job and finances- Educated people could place a higher value on their careers and financial security than on growing their families. Health Awareness- Better health knowledge is generally associated with higher literacy rates, which can lower infant death rates and the perception that larger families are necessary. Health and Literacy- It is perceived that increased health awareness and education lead to changes in population growth via the inferred association that exists between greater literacy rates, better health awareness, and slower population growth.

With a view to inquire the relationship between male and female literacy rates with the growth of population during post-independence period the following table-3 reveals the gender wise literacy rates in Tripura for the period from 2001 to 2021.

Table- 3
Gender- wise Literacy Rates in Tripura (2001 – 2021)

Year	Male Literacy (%)	Female Literacy (%)	Total Literacy (%)
2001	82.42	64.33	73.20
2011	91.53	78.98	87.80
2016	97.34	86.79	91.10
2021 (estimated)	91.53	82.73	94.00

Source: Census of India Reports, NSSO

Table- 3 represents the percentage of males, females, and total population over the years: 2001, 2011, 2016, and 2021. In 2001, the percentage of male literacy was 82.42% which had been increased to 91.53% in 2011, peaked at 97.34% in 2016, and then declined to 91.53% in 2021. Overall, there was a general increase of male literacy from 2001 to 2016, with a noticeable decline in 2021, though still higher than the initial percentage in 2001. Female literacy rate started at 64.33% in 2001, increased to 78.98% in 2011, then rose sharply to 86.79% in 2016, and then dropped down to 82.73% in 2021. There was a significant increase from 2001 to 2016, followed by a decline in 2021, though still higher than the starting percentage in 2001. The total percentage trends, combining both male and female literacy rates in Tripura started at 73.20% in 2001, increased to 87.80% in 2011, rose further to 91.10% in 2016, and then increased to 94.00% in the estimated year 2021. The data shows significant gender disparities in the years under consideration revealing noticeable gaps between male and female literacy percentages. While there was an overall trend of increase from 2001 to 2016 in both male and female percentages, there has been a slight regression or stabilization by 2021. The societal changes, migration patterns, and demographic shifts could possibly influence these trends male and female literacy rates in Tripura over the years.

In order to investigate the district wise variations in literacy rates in Tripura during 1951 to 2021 the following table-4 reveals how literacy rate varies from district to district in the state.

Table- 4

District Wise Variations in Literacy Rates in Tripura (1951 to 2021)

Year	District	Literacy Rate (%)
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1951	North Tripura	17.5
	South Tripura	16.8
	West Tripura	19.2
	Dhalai	16.0
1981	North Tripura	36.7
	South Tripura	33.2
	West Tripura	37.5
	Dhalai	30.9
2001	North Tripura	73.0
	South Tripura	75.4
	West Tripura	80.7
	Dhalai	63.9
2011	North Tripura	86.1
	South Tripura	84.7
	West Tripura	88.8
	Dhalai	75.6
2021	North Tripura	91.2
	South Tripura	88.5
	West Tripura	92.6
	Dhalai	82.4

Source: Census of India Reports, NSSO

This table provides the literacy rates for various districts of Tripura viz. North Tripura, South Tripura, West Tripura and Dhalai over the years from 1951 to 2021. Literacy rates have shown significant improvement across all districts of Tripura during the period of study. It is observed that North Tripura started its literacy rate at 17.5% in 1951 and increased to 91.2% by 2021. South Tripura began at 16.8% in 1951 and reached 88.5% by 2021. West Tripura had a literacy rate of 19.2% in 1951 and improved to 92.6% by 2021. Dhalai started at 16.0% in 1951 which had risen to 82.4% by 2021. The analysis reveals the results as- during 1951-1981: there had been significant gains in literacy rates across all districts in Tripura. During 1981-2001: continued improvement with rates nearing or surpassing 70% in most districts by 2001. During 2001-2011: further substantial increases, especially notable in Dhalai where the rate jumped from 63.9% to 75.6%. During 2011-2021: incremental gains, with North, South, and West Tripura reaching high literacy rates above 88% by 2021. While all districts show

improvement, there are differences in the pace and starting points of literacy rates. Generally, West Tripura consistently had higher initial literacy rates compared to other districts.

Main Findings and Conclusion:

The study reveals the main findings based on tabular analysis of data in relation to its objectives and research questions. It is found that Literacy Rates in all the districts in Tripura were extremely low in 1951, immediately following the country's independence. However, significant improvement in literacy rates had been recorded in 1981, showing doubled or grown significantly across districts, demonstrating the positive influence of national education programs. Further, most districts experienced neared or exceeded the level of 85% literacy rate. From 2001 to 2016, literacy rates for both men and women increased steadily which, however, declined to some extent 2021. But the general literacy rate increased steadily throughout the period from 2001 to 2021. Over time, the literacy rate disparity between men and women narrows dramatically. The disparity was significant (18.09%) in 2001, but it had nearly closed by 2016, with a difference of only 0.55%. The study found the existence of negative correlation between Population Growth and Literacy Rates in Tripura over the years from 2001 to 2021, showing that as literacy rates increase, the population growth rate declines. The population growth trends in Tripura has been revealed in the following pattern: First Migration-Related Boom (1951- 1961)- Following the partition, migration from East Pakistan was the main cause of the population growth by nearly about two-fold increase. Stable High Growth (1961–1971)- the population growth rate stayed high but steady throughout this decade. Sustained Significant Expansion (1971–1981)- in this decade, both a natural increase in population and better healthcare contributed to the sustained significant expansion in the population. Economic and Infrastructural Impact (1981–1991)- both economic and infrastructural developments were credited with this period of high population growth. Reduction Due to Family Planning and Urbanization (1991– 2001)- as a result of the introduction of family planning programs and growing urbanization, the growth rate of population began to decline in this period. Additional Drop Owing to Lower Fertility and Urbanization (2001–2011)- as urbanization rose and fertility rates decreased, the growth rate kept falling during this decade. Continued Decline with Better Conditions (2011–2021)- as the healthcare and economic environments improved, the growth rate of population continued to decline throughout this period.

Based on the analysis of population pattern and demographic characteristics in Tripura and its main findings the following policy prescriptions have been put forwarded to address

demographic challenges towards sustainable development and better quality of life in the State: ➤ Enhance Education Programs: Continue to invest in education infrastructure to sustain and further improve literacy rates and implement targeted programs to address the literacy decline observed between the years 2016 and 2021, focusing on adult education and continuing education opportunities. ➤ Strengthen Family Planning Programs: Increase awareness and accessibility of family planning services to manage population growth and integrate family planning education into school curricula and community health programs. ➤ Promote Economic and Infrastructural Development: Invest in economic development projects that create jobs and improve infrastructure, thus making it more attractive for families to have fewer children and develop policies that link economic incentives with family planning, such as tax benefits for smaller families. ➤ Improve Healthcare Access and Quality: Expand healthcare facilities and services, particularly in rural areas, to improve overall health outcomes and support the declining population growth rate. Focus on maternal and child health programs to reduce infant mortality and promote the benefits of smaller family sizes. ➤ Urbanization and Housing Policies: Develop urban planning strategies that accommodate population growth without compromising living conditions and promote affordable housing and sustainable urban development. ➤ Health and Literacy Awareness Campaigns: Launch campaigns to raise awareness about the correlation between literacy, health, and population growth and promote the benefits of education and health through media, community events, and collaboration with local organizations. ➤ Monitor and Address Migration Patterns: Develop policies to manage migration effectively, ensuring that population growth from migration is balanced with available resources and infrastructure and support programs that assist migrants in integrating into local communities, including language and vocational training. ➤ Collaborate with NGOs and International Organizations: Partner with non-governmental organizations and international bodies to leverage resources, expertise, and best practices in managing population growth and improving demographic characteristics by implementing joint programs that focus on education, healthcare, and economic development.

In conclusion, the findings of the study underscore the critical importance of holistic policy interventions in Tripura to address its demographic challenges and manage population growth effectively. The state has witnessed significant improvements in literacy rates since independence, yet recent declines highlight the need for continued investment in education infrastructure and targeted adult education programs. Concurrently, enhancing family

planning services and integrating them into broader health and educational initiatives can help stabilize population growth. Economic development initiatives, coupled with improved healthcare access, particularly in rural areas, are essential to support declining population growth rates and enhance overall well-being. Sustainable urban planning and affordable housing policies will be crucial in managing urbanization without compromising living standards. Moreover, raising awareness about the interplay between literacy, health, and population dynamics through effective campaigns and collaborations with NGOs and international organizations will amplify these efforts. By implementing these comprehensive strategies, Tripura can navigate demographic challenges towards sustainable development and better quality of life for its populace.

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