



REGIONAL DISPARITIES IN LEVELS OF POPULATION GROWTH IN INDIA

R.P. Pakhare

Abstract

Population geography is an important discipline to study different aspect of demography. In the present paper an attempt has been made to study the trend of population growth and to elaborate the levels of population growth during 1991-2001 and 2001-2011. The present work is totally based on secondary sources of data which have been collected from census of India and related web sites. The actual population growth rate has been calculated with the suitable formula and statistical techniques are used for calculation of standard deviation values. The categories of population growth are based on India's actual population growth during 1991-2001 and 2001-2011 and the standard deviation (S.D.) values. On the basis of India's actual population and the standard deviation values, the population growth categorized in seven different categories. Mean value for the period 1991-2001 is 21.53 (actual growth of population of India) and S. D. Value is 13.23. For the period 2001-2011 mean value is 17.63 and S.D value is 9.93. India is selected as a study area. Census 1921, recorded minus growth rate in Indian population history. On the contrary 1971 census recorded highest population growth (24.79%). After 1991 India has declined its population growth with considerable rate. Most of India states stood at low and medium level of population growth. The developed states have relatively high literacy rate so it is observed a declining rate of population growth.

KEY WORDS: Population, Population Growth, Actual Population Growth, Standard Deviation Values, Regional Disparities, Levels of Population Growth.

INTRODUCTION:

G. T. Trewartha (USA) was an important personality who elevated population studies to the status of a systematic branch of Geography. In India, Dept. of Geography at the Punjab University, Chandigarh was the first to introduce teaching and research in Population Geography at the PG level in the early 1960s. (Chandana, 2002 p. 25). The scholars like Clarke, W. Zelinsky, J. Beaujeu-Garnier, etc., have contributed in the field of population geography. The study of population has a great importance because it is closely related to geographical, economic, social and political aspects. It gives an idea for planning and development of a region. The population geographer used the census, the surveys, the registration and miscellaneous for collecting data about population. The population census is the most important source of basic data for population geographer. The growth of population is basic process which affects different components of demography. Population growth refers to the growth of human population in a particular area during a specific period of time. It may be positive or negative. Basically Fertility, Mortality and Migration or Mobility are three major components of population growth. The changes in the rate of population growth can be measured either in terms of percentage or in absolute numbers. (Ghosh, 1985, p.52). The natural rate of growth of population depends on birth and death rates. Migration, one of the major factors plays a crucial role in actual rate of growth of population. It is clear that actual growth rate of population is obtained by finding out the difference between population of two dates, dividing it by population at the beginning of the period and multiplying it by 100. (Ghosh, 1985, p. 60)

OBJECTIVE:

The main objective of this research paper is to describe the state wise actual population growth during 1991-2001 and 2001-2011 and to elaborate levels of population growth for the same.

DATABASE AND METHODOLOGY:

The entire paper work is based on the secondary sources of data which are published by census of

R.P. Pakhare

India. The actual population growth is calculated with the help of following formula:

$$Ar = \frac{P_n - P_o}{P_o} \times 100$$

Where:

Ar is the actual rate of growth of population.

P_n is Population of each state at the end of period

P_o is Population of each state at the beginning of the period

The standard deviation values are calculated with the help of statistical techniques. The category of population growth is based on India's actual population growth in particular period (1991-2001 and 2001-2011) and the standard deviation (S.D.) values for the same. On the basis of India's actual population growth in particular period and the standard deviation values, the population growth categorized in seven different categories. Mean value for the period 1991-2001 is 21.53 (actual growth of population of India) and S. D. Value is 13.23. For the period 2001-2011 mean value (actual growth of population of India) is 17.63 and S.D value is 9.93.

STUDY AREA

India has a unique culture and is one of the oldest and greatest civilizations of the world. Himalaya is in the north, Indian Ocean in the south, humid tropical forest on the South-west coast, the Brahmaputra valley on the east. Thar Desert is in the west. India covers an area 32, 87,263 sq. kms. It self sufficient in agricultural production and tenth industrial country in the world. The Great Himalaya in the north. India lying entirely in north hemisphere, the main land extends between latitudes $8^{\circ} 4'$ and $36^{\circ} 6'$ and $68^{\circ} 7'$ and $95^{\circ} 25'$ east and measure about 3214 km. from north to south and 2933 km. from east to west. It has land frontier of about 15200 km. The total length of the coastline of main land, Lakshadweep Island and Andaman and Nicobar Island is 7516.6 km. The country has a common border with Afghanistan and Pakistan to the north –west. China, Bhutan and Nepal are to the north, Myanmar to the east and Bangladesh to the east of West Bengal. Sri Lanka is separated from India by a narrow channel of sea formed by the Palk Strait and Gulf of Mannar. The Himalayan comprises three almost parallel ranges. The mountain extends over a distance of about 2400 kms with a varying width of 240 km. to 320 kms. The Peninsular plateau is marked off from the plains of the Ganga and Indus by a mass of mountain and hill ranges varying from 460 mts. to 1220 mts. in height. Prominent among these are the Aravali, Vindhya, Satpura, Maikala and Ajanta. Western Ghat is rangas from 915 mts. to 1220 mts. in height. Between the Western Ghats and the Arabian Sea lies a narrow coastal strip, while between Eastern Ghat and the Bay of Bengal there is a broader coastal area. The southern point of plateau is formed by Nilgiri Hills where the Eastern and the Western Ghats meet. Indian River system can be classified in Himalayan Rivers, Deccan Rivers, Coastal Rivers and Rivers of the inland drainage basin. The climate of India is broadly described as tropical monsoon type. There are four seasons i.e. winter, summer, rainy and post monsoon. Due to climatic condition, India has a rich in vegetation types.

POPULATION GROWTH IN INDIA: Table 1 shows that the population of India has increased with fast rate till 1991. The period from 1901 to 1921 has been recognized as a period of stagnate or motionless for growth in population. During this period India's total population increased from 238396327 (238 million) to 251321213 (251 million). It means that total growth of population was

R.P. Pakhare

12924806 (more than 12 million). In this period mortality rate was high because of epidemics, famines and food shortage (Chandana, 2002 p. 204). During 1921 to 1951, population of India was increased from 251 million to 361 million. It means that about 110 million added in three decades and population growth was recorded between 11 to 14 per cent for the same period. The significant change in Indian population was seen due to declining of death rate. The successful efforts made to reduce death from epidemics, food shortage, etc. The agricultural development was helpful to increase agricultural production i. g. food supply. Not specific but generally sanitation and medical facilities were improved which helped to reduce mortality. The mortality rate was declined at considerable rate but birth rate remained at high position so population increased with rapid growth. After independence, 1951 to 2011, in this sixty years period, more than 849 million population added in total population of India. Due to development in different sectors like agriculture, industry, services and improvements in health and medical, education facilities, death rate declined rapidly as compared to death rate, birth rate declined slowly.

Table: 1: Population Growth in India (1901-2011)

Sr.No.	Census	Population	Decadal Growth	Per cent
1	1901	238396327
2	1911	252093390	13697063	5.74
3	1921	251321213	-772177	(-0.30)
4	1931	278977238	27656025	11.00
5	1941	318660580	39683342	14.22
6	1951	361088090	42427510	13.31
7	1961	439234771	78146681	21.64
8	1971	548159652	108924881	24.79
9	1981	683329097	135169445	24.65
10	1991	846421039	163091942	23.86
11	2001	1028737436	182316397	21.53
12	2011	1210193422	181455986	17.63

Source: Publication Division, Ministry of Information and Broadcasting, Govt. of India, 2014 p. 9(Hindi Edition).

During this period population growth has increased with fast rate and recorded growth rate was 13.31 to 24.79 till 1971. After census of 1971 declining trends were seen in growth rate of population. After 1991 the population growth rate was declining at a considerable rate. Actually Indian population

R.P. Pakhare

growth rate started declining from 1981.

REGIONAL DISPARITIES IN POPULATION GROWTH (1991-2001): Among various states, Kerala recorded lowest growth rate i.e. 9.42 per cent during 1991-2001. It has highest literary rate both in male (94.24 per cent) and female (87.72 per cent) as per 2001 census. The states like Himachal Pradesh, Punjab, Uttarakhand, Tripura, Assam, West Bengal, Orissa, Chhattisgarh, Andhra Pradesh, Karnataka, Goa, Tamil Nadu, etc., have recorded population growth rate about 10 to 20 per cent during 1991-2001. Tamil Nadu one of the developed states of India recorded about 12 per cent (11.72 %) population growth during this period. The states like Andhra Pradesh (14.58%), Goa (15.20%) recorded about 15 per cent population growth. States like Haryana, Rajasthan, Bihar, and Mizoram recorded more than 28 per cent growth of population. Meghalaya Chandigarh, Delhi, Nagaland, Daman and Diu, Dadra and Nagar Haveli have not only crossed nation's average population growth rate but reached higher level (30.65 to 64.52%). The Nagaland State recorded highest population growth rate (64.20 %) may be due to migration from surrounding areas. Dadra and Nagar Haveli recorded highest growth rate of 59.22 per cent among the Union Territories. It was followed Daman and Diu 55.73 per cent, Delhi 47.02 per cent and Chandigarh 40.28 per cent.

LEVELS OF ACTUAL POPULATION GROWTH (1991-2001):

Lowest and Very Low Level of Population Growth: The states and Union Territories (UT) which have reached 3 S. D. and 2 S. D. below the nation's average of population growth (21.53 per cent) respectively and range of growth of population is between (-18.16) to (-4.93) and (-4.93) to 8.3 are included in the lowest and Very Low Level of Population Growth category. Out of total states and Union Territories there are no any falls in these categories of population growth

Table: 2: Levels Of Actual Population Growth 1991-2001, 2001-2012

Sr. No.	S. D's	Levels of Actual Population Growth (%)	Range Actual Population Growth (%) 1991 -2001	Range Actual Population Growth (%) 2001 -2011
1	-3	Lowest	(-18.16) to (-4.93)	(-12.16) to (-2.23)
2	2	Very Low	(-4.93) to 8.3	(-2.23) to 7.7
3	-1	Low	8.3 to 21.53	7.7 to 17.63
4	+1	Medium	21.53 to 34.76	17.63 to 27.56
5	+2	High	34.76 to 47.99	27.56 to 37.49
6	+3	Very High	47.99 to 61.62	47.42 to 57.35
7	+4	Highest	61.62 to 74.45	57.35 to 67.28

Source: Publication Division, Ministry of Information and Broadcasting, Govt. of India, 2010, Pp.8, 9. Publication Division, Ministry of Information and Broadcasting, Govt. of India, 2014, P.15 (Hindi Edition) Calculated by Author

R.P. Pakhare

Low Level of Population Growth:

In this category the states and Union Territories which have reached 1 S. D. and having range of actual population growth between 8.3 to 21.53 per cent are involved. The states and UT like Himachal Pradesh, Punjab, Uttarakhand, Tripura, Assam, West Bengal, Orissa, Chhattisgarh, Andhra Pradesh, Karnataka, Goa, Lakshadweep, Kerala and Tamil Nadu have low population growth rate. Most of southern states have recorded low population growth. About fifty per cent (15) states and UT belong to this category. It is important to note that all above mentioned states and UT declined their actual population growth rate 1 to 10 per cent as compare to 1981-1991. The States and UT recorded a growth rate less than the national average of 21.53. This particular category includes all southern states and some hilly states like Himachal Pradesh, Uttarakhand and some eastern states.

Middle Level of Population Growth:

Those states and Union Territories which have reached 1 S. D. and having range of actual population growth between 21.53 to 34.76 per cent are included in this category. Out of total (35) states and UTs 15 states and UT are related to this category. It is interesting to note that Mizoram recorded 10 per cent less population growth as compare to growth rate during 1981-1991 (39.70). Among the states and UT belonging to this category Gujarat recorded 22.66 per population rate which is low where Sikkim recorded highest (33.06 per cent) population growth rate. The UT, Haryana and Andaman and Nikobar have nearly equal (28.43 and 27.89 per cent respectively) population growth rate.

High and Very High Level of Population Growth:

The UT Chandigarh, Delhi at one side Daman and Diu and Dadra and Nagar another side have reached +2 S.D. and +3 S. D. having actual population growth range from 34.76 to 47.99 per cent and 47.99 to 61.62 per cent respectively. It includes high level of population growth and very high level of population growth rate categories. Chandigarh, Delhi UT is developed industrial and service sector and highly urbanised areas which attracts surrounding peoples for a job. Most of the UTs are urban based and their growth rate is high due to their attraction for employment purposes.

Highest Level of Population Growth:

The states and UT which have reached +4 S. D. and having actual population growth range from 61.62 to 74.45 per cent includes this category. The only Nagaland State is merged in this category. Nagaland has not only recorded the highest growth rate of population during 1991-2001(64.52 per cent) but increased about 8.44 as compared to preceding decade's (56.08 per cent 1981-1991). It may be in migration into the state from neighbouring areas.

REGIONAL DISPARITIES IN POPULATION GROWTH (2001-2011):

During the period 1991- 2001 the national average population growth rate was recorded 21.53 per cent. It is reduced in 2001-2011 and stay on 17.63 per cent.

Table: 3: Levels of Actual Population Growth (1991-2001)

Sr. No.	S. D's	Levels of Actual Population Growth (%)	Range of Actual Population Growth (%)	Included States and Union Territories
1	-3	Lowest	(-18.16) to (-4.93)	NIL
2	-2	Very Low	(-4.93) to 8.3	NIL
3	-1	Low	8.3 to 21.53	Himachal Pradesh, Punjab, Uttarakhand, Tripura, Assam, West Bengal, Orissa, Chhattisgarh, Andhra Pradesh, Karnataka, Goa, Lakshadweep, Kerala, Tamil Nadu, Pondicherry,
4	+1	Medium	21.53 to 34.76	Jammu and Kashmir, Haryana, Rajasthan, Uttar Pradesh, Bihar, Sikkim, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Jharkhand, Madhya Pradesh, Gujarat, Maharashtra, Andaman and Nicobar Islands
5	+2	High	34.76 to 47.99	Chandigarh, Delhi,
6	+3	Very High	47.99 to 61.62	Daman and Diu, Dadra and Nagar Haveli,
7	+4	Highest	61.62 to 74.45	Nagaland

Source: 1. Publication Division, Ministry of Information and Broadcasting, Govt. of India, 2010, Pp.8,

9. 2. Calculated by Author

During the period 2001-2011 agricultural developed state Punjab recorded minus (-6.79 per cent) growth rate as well as during 1991-2001 highest growth rate recorded Nagaland also recorded negative population growth rates(-0.47 per cent). The UT Dadra and Nagar Haveli and Daman and Diu and remained top most in population growth with 55.49 per cent and 53.49 per cent respectively. The states and UT like, Pondicherry, Chhattisgarh, Jharkhand, Mizoram, Arunachal Pradesh Bihar, Meghalaya etc., recorded 5 to 10 per cent more population rate than the nation's average population growth (17.63 per cent). However, two to three per cent high population growth rate was observed in Uttarakhand, Haryana, Delhi, Rajasthan, U.P., and M.P. Number of states and UT such as Himachal Pradesh, Sikkim, Tripura, West Bengal, Orissa, Maharashtra, Andhra Pradesh, Karnataka, Goa, Tamil, Nadu recorded population growth below the national average (17.63 per cent).

Lowest Level of Population Growth:

The states and Union Territories (UT) which have reached 3 S. D. below the nation's average

of population growth. The range of growth of population is between (-12.16) to (-2.23). It is included in the lowest Level of Population Growth category. Out of total states and UT only Punjab is included in this category of population growth. The state has experienced rapid urbanization and increased urban population but this growth is not same all over state. In previous decade it was included in category of low level of population growth. During 1991-2001 Punjab recorded population growth 20.10 per cent but during (2001-2011) it has recorded (-6.79 per cent).

Very Low Level of Population Growth:

The states and Union Territories (UT) which have reached 2 S. D. below the nation's average of population growth and range of growth of population is between (-2.23) to 7.7 per cent are included in low Level of Population Growth category. The states and UT like Nagaland, Kerala Lakshadweep, and Andaman & Nicobar Islands are included in it. It is interesting to note that Nagaland state has recorded highest population growth (64.52 per cent) during previous decade (1991-2001) but during 2001-2011 it recorded (-0.47) per cent population growth. It may be due to less in migration from surrounding areas. Kerala a highly literate state in India got success to decline population growth rate during last three decades. During 1981-1991, 1991-2001 and 2001-2011 the state Kerala recorded population growth rate 14.32 per cent, 9.42 per cent and 4.85 per cent respectively. It is an important that Andaman & Nicobar Islands declined its population growth rate from 26.89 per cent (1991-2001) to 6.68 per cent (2001-2011). It means that it became successful to reduce population growth by 20 per cent.

Table: 4: Levels of Actual Population Growth (2001-2011)

Sr. No.	S. D's	Levels of Actual Population Growth (%)	Range of Actual Population Growth (%)	Included States and Union Territories
1	-3	Lowest	(-12.16) to (-2.23)	Punjab
2	-2	Very Low	(-2.23) to 7.7	Nagaland, Lakshadweep, Kerala, Andaman & Nicobar islands
3	-1	Low	7.7 to 17.63	Himachal Pradesh, Chandigarh, Sikkim, Tripura, Assam, West Bengal, Orissa, Maharashtra, Andhra Pradesh, Karnataka, Goa, Tamil Nadu,
4	+1	Medium	17.63 to 27.56	Jammu and Kashmir, Uttrakhand, Haryana ,Delhi, Rajasthan, Utter Pradesh, Bihar , Arunachal Pradesh, Manipur, Mizoram, Zarkhand, Chhattisgarh, Madhya Pradesh Gujarat
5	+2	High	27.56 to 37.49	Meghalaya, Pondicherry,
6	+3	Very High	47.42 to 57.35	Daman and Diu, Dadra and Nagar Haveli,

Source: 1.Publication Division, Ministry of Information and Broadcasting, Govt. of India, 2014, P.15 (Hindi Edition) 2. Calculated by Author

Low Level of Population Growth: The states and Union Territories (UT) which have reached 1 S. D. below the nation's average of population growth and range of growth of population is between 7.7 to 17.63 per cent are included in low Level of Population Growth category. The states and UT like Himachal Pradesh, Chandigarh, Sikkim, Tripura, Assam, West Bengal, Orissa, Maharashtra, Andhra Pradesh, Karnataka, Goa, Tamil Nadu are included in this category. The Himachal Pradesh, Tripura,

R.P. Pakhare

Assam, West Bengal, Orissa, Andhra Pradesh, Karnataka, Goa, Tamil Nadu states have recorded low level population growth rate in previous decade but except Tamil Nadu all above states declined their per cent of population growth.

Middle Level of Population Growth: Those states and Union Territories have reached 1 S. D. and having range of actual population growth between 17.63 to 27.56 per cent are included in this category. North, north east India states Himachal Pradesh, Sikkim, Tripura, Assam etc. and south India states like Andhra Pradesh, Karnataka, Goa, Tamil Nadu falls in this category and they crossed nation average population growth rate.

High and Very High Level of Population Growth: Those states and Union Territories have reached 2 S. D. and 3 S. D having range of actual population growth between 27.56 to 37.49 per cent and 47.42 to 57.35 per cent respectively are included in this category. Meghalaya, Pondicherry recorded high population growth rate where as Daman and Diu, Dadra and Nagar Haveli recorded very high population growth rate. Except Meghalaya, all remaining UT experienced urban based environment. The people migrated from surrounding states or areas for a job or other work. Attraction of urban facilities, educational facilities, and more chances of career development are responsible for growing population at fast rate.

CONCLUSION: The period from 1901 to 1921 known as motionless period of Indian population growth. After independence Indian population growth has always remained high. During 1991-2001 most of states recorded low to medium level of population growth. A few states and UTs like Chandigarh, Delhi, Daman and Diu, Dadra Nagar Haveli and states like Nagaland recorded high to highest level of population growth. During the period 2001-2011 most of Indian states and UTs recorded low and medium level of population growth. It is interesting to note that the state like Punjab recorded lowest population growth. In previous decade (1991-2001) Nagaland recorded highest population growth but during 2001-2011 it recorded very low population growth. The UTs like Daman and Diu, Dadra Nagar Havel remained on same position i.e. very high level of population growth.

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***DR. R. P. Pakhare**

Associate Professor and Head,
Dept. of Geography
Arts and Commerce College,
Kalamb-Walchandnagar 413 114 (Pune)