Changing Pattern of Population Growth of Thalisain Block, Pauri District, Uttarakhand

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Abstract

The population is very important component of any region, which determines the level of socio-economic development and environmental degradation in an area. It has been one of the most important subjects of study for social scientists including geographers. The identity of any region is known by its people who lived with its territories. The word 'Population' invariably brings to one's mind varied images, problems and solutions. The present study is an attempt to assess the changing pattern of population growth of Thalisain block. The information are taken from different sources of secondary data and the main source of data for analysis is from the censes hand book and Garhwal Gazetters. Thalisain development block of Pauri district is the area of interest and is extended from 29°54'30" to 30°10'0" N and 78°54'0" to 79°13'30" E, measuring 35km in length and 49km in width. The area is completely rural and covers 584.km².

Keywords: population, socio-economic development, environmental degradation, population growth, Thalisain block

The Biological capacity of man to breed, with development adaptability and inhered dexterity to overcome topographical and environmental resistance is the most dynamic characteristics to effect land and its associated natural resource factors. The identity of any region is known by its people who lived with its territories. Population is the sum of social relations between people, since man is essentially the sum of all social relation Sales and Valenter (1986). The world experienced dramatic population growth during the twentieth century, with the number of inhabitants doubling from 3 to 6 billion between 1960 and 2000. India, too, saw very rapid population growth during this period- from 448 million to 1.04 billion- and to 1.21 billion in 2010.The population of India at 0:00 hours of 1st

March, 2011, as per the provisional population totals of census 2011, is 1,210,193422 compared to a total of 1,028,737,436 in 2001. In absolute terms, the population of India has increased by more than 181 million during the decade 2001-2011. Uttarakhand population in 2011 was 1,01,16,752. And decadal growth rate of population was 1917.

The population geographer endeavor to unravel the complex relationship between population and physico-cultural environment or more explicitly to deal with the spatial perspectives of population (Clarke, 1969).

STUDY AREA

Thalisain development block of Pauri district is the area of interest and is extended from $29^{0}54'30''$ to $30^{0}10'0''$ N and $78^{0}54'0''$ to $79^{0}13'30''$ E, measuring 35km in length and 49km in width. The Thalisain Block with an area of 584 km² and a population of 56746 (2005) has an average density of 85.46 km². Most of the population of this block is confined to valleys and mid slopes of the hill ranges. The area is totally rural with few rural service centers which are developed in urban characteristics.

Figure 1. Location Map of Study Area

Factor affecting the distribution of population:

The distribution of population basically depends upon the physiographic of the mountains. The heterogeneity of environment in an area has influence the distribution of population, topography, altitude; slope, aspects, climate, soil, land and water are the major physical factors which are responsible for the uneven distribution of population in mountainous region. This distribution of population pattern is like a sensitive photographic plate which records changing condition (Mehra and Matharoo).

Out of the physical factors, some socio-economic factors, i.e. culture, society, transport, administrative setup and communication are also influence the concentration of the population in the study area. Some responsible factors are being explained here.

Land: The most important factor for the distribution of population and settlement is land. Land is an assemblage of rocks, slope, soil and aspects. Landforms are developed by the tectonic and denudation processes on the surface of the earth. River valleys, spurs, mountain ranges and water divides are the major features of the study area. Most of the population is concentrated on the valleys where as fertile agricultural land is available on the terraces. The moderate concentration of population is found on the gentle slope convex spurs (mid slope). Very sparse population with scattered settlements is located on the water divides and ridges.

Altitude: Altitude is the dominant natural factor in the hilly regions. Vast altitudinal variations affect the distributional pattern of population. The Alternative distributional patterns are observed in the valleys. Concentration of most of the population is in the valleys with lowest altitude. As the altitude increases the distribution of population decreases, hence the hill ranges have less population compared to valley.

Slope: Slope of landforms is one of the influencing factors for uneven distribution of population. Slope is determined by the formation of soil resources in the region in which people's occupation is based. Since agriculture is the traditional occupation of the people, the cultivation on the soil requires workable slopes. The agricultural fields in the hilly areas are reconstructed according to the slope of the ground. The fields are long and wide on the gentle slopes (15-25 degrees) while the fields are very narrow and small with more than 2m height on the steep slopes (>25 degrees). The slope of ground also affects the shape, size, location and spacing of the settlements. The compact and large size of villages is closely located in the valleys along the river terraces.

Soil: Formation of soil depends upon the parental material, slope of the ground and formation process. The good soil elements and their thickness is observed on the gentle to moderate slopes while the poor soil is found on the steep to very steep slopes. Thickness of soils and their formation affects the agricultural activities on which a majority of the regional population depends. Maximum construction of population is found in the Talaon land or valley zone which bears good quality of alluvial soils.

Water: Water is an essential need of the human population. Other factors, i.e. land, altitude, soil and climates are insignificant in comparison to the water. In mountainous terrain, springs and streams are the only source of drinking water. Since very beginning the settlements were located near the source of water. In the valley areas, dense population is the reason of, abundance of water in the form of springs

and rivers. Lack of water resources on the high hill ranges are responsible for scattered settlements with low population density.

Climate: Climate is an environmental factor which indirectly effects the distribution of population in any region. The climate is influenced by the altitude and relative position of the land. The overall climate of the region is temperate. The valley area experiences warm climate, hence dense population is found in the valleys. Mid slope and mountain ranges have a temperate climate hence semi compact and scattered settlements are found here. Above 2000m, there are temporary seasonal settlements which are generally distributed on the forest land.

Aspects: Aspects play a significant role in the selection of settlement sites in the Himalayan Mountain. Most of the Himalayan ranges extend from north-west to south-east direction. The south-eastern face is most favorable site for the location of settlements. Because of the sunny aspect, very compact settlements are located on the spurs and river terraces. The south- eastern faces are denser than northern and western aspects. North western aspects are not favorable for human habitation and agricultural occupations because it receives less solar energy.

Socio-economic Factors: A micro level, factors, like social organization and intergroup antipathies can also influence the distributional patterns of population in specific position. In the mountain environment, peoples want to live together. Safety factor is most important in the natural environment. In the valleys, villages are closely related to each other while on the high hill ranges the villages are scattered and less populated.

The power of an area to attract and support population may also be influenced by its location in relation to other areas and to the major transportation routes. Transport and extension of services are the factors operating during the current re-distribution of population. Construction of road along the river and main ridges, termination points, schools, colleges, hospitals, market centers and junction points attract the people for business and other comforts. Therefore, new settlements are developed along the roads, bus stations and market centers. Thalisain, Tripalisain, Pitsain, Bungidhar, Kaiynur and Mushethi are the prominent examples of road side settlements.

Growth of population

In population Geography the term growth of population is used in its broadest connection to cover change in population, numbers inhabiting territory during a specific period of time, irrespective of the fact whether the change is positive or negative. Such a change can be measured both in terms of Absolute number and in terms of percentage. During last 50 years from 1951 to 2001 there is 667 million populations in India. It is growing in a fast pace on an average of 2% per year. For this growing speed of population there are certain basic reasons. Developmental activities in different parts of the country, improvement in living condition like food, clothing and shelter, improvement in medical facility, rural migration to urban centers. The estimated mortality rate has declined from 27/1000 to 8/1000 in 1991 to 2001 respectively. In similar way birth rate is declining from 41/1000 in 1951 to 26/1000 in 2001 in India.

Table 1. Decadal Growth of population from 1971 to 2011

S.No.	Name	1971-81	1981-91	1991-2001	2001-2011
1	India	24.75	23.79	21.54	17.64
2	Uttarakhand	26	24.23	19.2	18.81
3	Pauri District	10.45	9.05	3.87	-1.41
4	Almora District	19.2	9.43	3.14	-1.28
5	Thalisain Block	7.36	14.44	10.33	-8.1
a	W. Nayar Basin	13.1	10.82	7.35	0.43
b	E. Nayar Basin	-8.37	1.69	0.98	0.87
c	Bino Basin	2.63	1.93	2	0.47

In presents Table 1 there is a comparative growth data of population during last 40 years (1971-2011) and it shows the growth rates of India, Uttarakhand state, Pauri District, Almora District and Thalisain Block. The total growth Rate of the block is 10.33% (2001) which is 8.87% less from the state and 11.01% less from India. But in 2011 block has -8.1, state has 18.81 and India has 17.64 percent growth rate. If we compare the growth rate from Pauri (-1.41%) and Almora district (-1.28%), Thalisain Block has (-8.1%). Here the condition of the growth rates of the block is in 1971-81 was 7.36%, in 1981-91 there was a sudden increase in population due to which 14.44% growth was recorded, in 1991-2001 (10.33%) increase was seen but it was in declining condition and in 2001-2011 (-8.1%) it was in negative form.
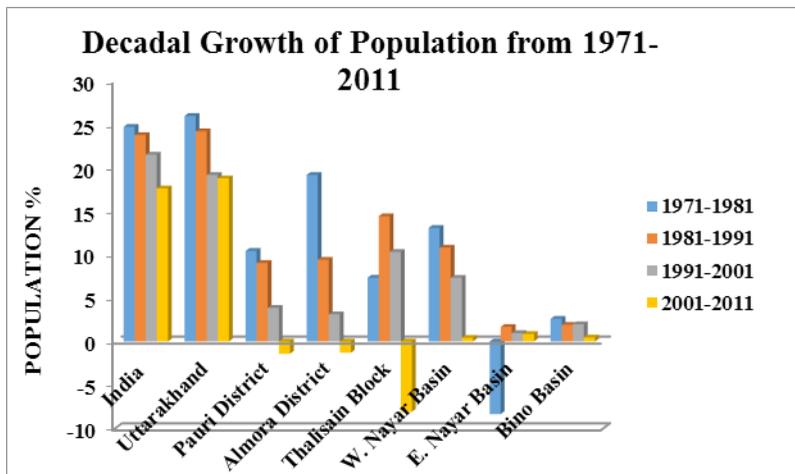

Figure 2. Decadal growth of population from 1971 to 2001

The spatial pattern of population growth varies from village to village and region to region. As shown in table 1, the growth rate in the western Nayar in 1971-81 was 13.10%, in 1981-91 it was 10.82%, in 1991-2001 it is 7.35% and in 2001-2011 was 0.43% which was all time positive, while the Eastern

Table 2. Population Growth of Thalisain Block

Decades	1971-1981		1981-1991		1991-2001		2001-2011		1971-2001		
Categories (%)	% village	% population change	% village	% popu-lation change	% village	% popula-tion change	% village	% popu-lation change	Total change %	Total Annual Growth rate%	Remark
Uninhabited	0	0	0	0	0	0	0	0	0	0	
Below-10	6.86	-11.86	10.29	-1.74	7.84	-0.86	42.08	-8.76	-23.22	-1.45	Negative
(-10)-0	9.31	-0.25	7.35	-0.16	12.75	-0.61	14.85	-0.20	-1.22	-0.10	
0-10	20.59	1.14	20.10	1.21	28.92	1.77	12.38	0.24	4.36	0.41	Positive
10-20	26.96	4.36	27.94	5.26	28.92	4.71	10.40	0.50	14.83	1.43	
20-30	19.61	6.38	25.00	6.73	15.20	3.57	6.93	0.57	17.25	1.67	
Above 30	16.67	7.58	9.31	3.13	6.37	1.75	13.37	2.24	14.70	1.25	
Total	100.00	7.36	100.00	14.44	100.00	10.33	100.00	12.50	75.57	3.21	

Nayar 1971-81 was -8.37% annually negative decline but, in 1981-91 there was an increase in growth rate of 1.69% and the trend is on in 1991-2001 there is again a negative declination of 0.98% and in 2001-2011 it is 0.87 %. The trend shows the decrease in population.

Bino basin had 2.63% growth rate in 1971-81, then in 1981-1991 it was 1.93, in 1991-2001 it is 2% and in 2001-2011 it was 0.47%.The growth rate of Thalisain block from 1971 to 2011 is 25.24%. The changes which are in population growth bear influence of migration and defective system of enumeration in the previous decades. This trend shows the fluctuating pattern of population growth in the block. The population growth of each village is calculated in the last decade (1991-2011) which shows wide variations from minus -6.35% to plus 56.63%.

Table 2 Shows 6 classified groups of growth rate from below -10 to above 30 which is representing the decadal growth of population in the villages.

Growth during 1971-81

The maximum 26.96% villages of the area are under the category of 10-20 growth rates. This is the mid category from where both upward and downward the trend is decreasing, but not in the case of population change. Here the trend from first category below – 10 (-11.86%) is increasing negative to positive till the last above 30% where the change is 7.58%. The 0-10 category is having second highest 20.59% villages and the category 20-30 where the villages are 19.61%. Out of the total 16.67% villages had above 30 growths. Categories from 0-10 to below 30 have positive and high population growth covering total 83.83% villages. About 16.17% of villages are under negative growth of Population and the categories are below -10 to -10-0. Low population growth villages are Pokhari, Bhatkoti, Bartoli, Kimwadi, Pitrasain, and Bajori. The high growth populated villages are Kathud, Okhilyoun, Paptoli, Dang, Ghumeli Urf Pokhari and Kaido Pendal Gonth had 100% population growth. The Figure 3 shows that during 1971-81 the lowest growth of population occurs in three pockets and one narrow belt in Eastern Nayar Basin. The main reason behind it is infrastructural backwardness which would have operated as push factor on the migrants. On the other hand high growth of population was found in the Western Nayar Basin and Bino which bear influence of infrastructural development and extension of services in these areas.

Growth during 1981-91

In Thalisain block this decade had recorded highest population growth compared to 1971-1981 and 1991-2001. Trend of population growth is change as found in 1971-81 decade and from below -10 to 10-20 the trend is moving upward, at 20-30 the population growth is highest, and from 20-30 categories onward the population growth down fall starts. The percentage of negative growth rate villages is more than in 1971-81 decade.

Out of total villages 17.64% villages are covered under negative group and there population growth is as follows, Okhilyoun (-78.67%), Southi (-67.14%), Khadkiyou (-53.57%), Kolyani (-29.68%) and Byasi

(-24.06%). Under positive group the categories are from 0-10 to above 30 and total villages under this category are 83.35% from which maximum 27.94% villages come under 10-20 category, followed by 25% villages under 20-30. Category 0-10 has 20.1% villages and below 30 there are 9.31% villages. The village which comes under positive group is Jandriya Talla (59.72%), Gewae (59.26%), Kusrani (31.48%), Jaiti or Jaitidang (47.06%), Khand talla (29.73%) etc. (Figure 4)

Growth during 1991-2001

The trend of growth is slightly changed during this period. Category 0-10 and 10-20 has similar percentage of villages but the population growth is differing to each other, 1.77% and 4.71% respectively. Followed by 20 – 30 category where change is 3.57% and villages coved are 15.2%. The last category in positive change is above 30%, village covered are 6.37% with percent change of1.75.There are two category of negative change (-10) – 0 and below -10 where change is -0.61% and -0.86% covers 12.75% and 7.84% villages.

The growth rate is calculated in the villages of Mandoli (-57.14%), Hansyudi (-41.24%), Kaphald (-13.17%), Dobra (-11.59%), Dumlikot (-8.72%) and minimum are Bhesawara Lagga Basouli (46.15%), Kunaith (26.11%), Maroda (23.09%). (Figure 5).

Growth during 2001-2011

As compared to other decades, in 2001-2011the percent of population change pattern is different. The highest percent of village (42.08) are in category below -10 and percent population change is -8.76, which is followed by category -10 to 0 where change is -0.20 percent and 14.85% village are covered. Third category is Above 30 where villages are 13.37% and change is 2.24%, followed by 0-10 category where change is 0.24% with 12.38% villages, fifth category is of 10-20 where villages are 10.40% and change is 0.50 % and last sixth category is of 20-30 where villages are 6.93% and change is of 0.57 %.
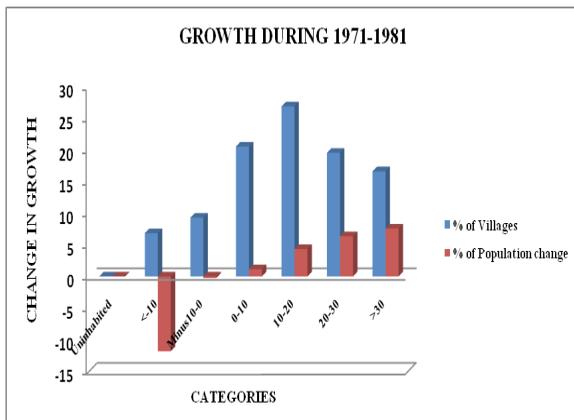

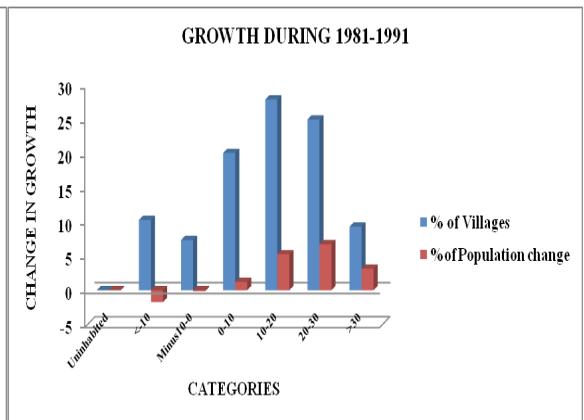**Figure 3 Growth during 1971 - 1981**

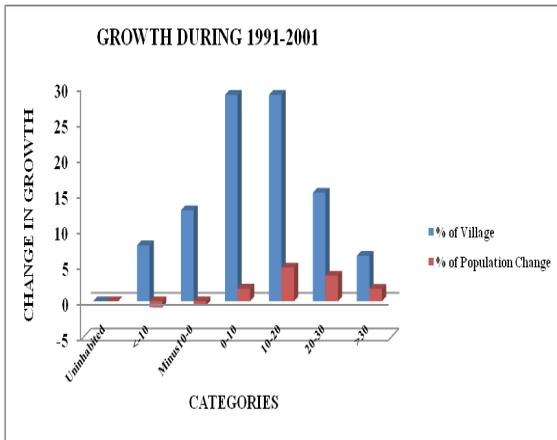**Figure 4 Growth during 1981 - 1991**
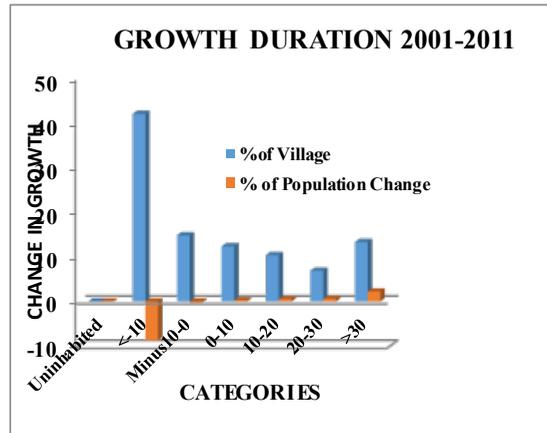
Figure 5. Growth during 1991 - 2001

Figure 6. Growth during 2001 – 2011

Comparing to other decades, this shows very less change in positive aspect and more change in negative aspect. The growth rate is calculated in the villages of Mandoli (-60.12%), Hansyudi (-43.28%), Kaphald (-17.17%), Dobra (-13.60%), Dumlikot (-10.72%) and minimum are Bhesawara Lagga Basouli (44.11%), Kunaith (22.05%), Maroda (20.19%). After observing, growth rates are high in those villages which are large in nature or those villages which are located near the rural service centers. The rural service centers are not separately enumerated but they are included in nearby village which is the part of land. The highest growth is associated with Kirsal, Bagwadi and Bharikh areas which bear influence of improved medical, educational and transportation facilities in the areas of higher order service centers (Figure 6).

Conclusion

The overall growth from 1981-2001 has been asses in the Table 2. It shows that 17.25% change is in 20 - 30% growth rate during four decades. Followed by 14.83% change has 10 - 20% growth rates with a positive change. About 14.70% changes are under above 30 % growth rate followed by 0-10% category (4.36% changes). Negative growth rates are also observed in category below -10% where changes -23.22% which was highest from all the categories. After the detail analysis of growth of population in the Thalisain area, the conclusions can be drawn that after 40 years the growth rate of this area is about 32.13%. It shows that the population is increasing at the rate of 3.21% persons every year in the hills but the distribution is not equal. The reason of this situation is rural migration to plains and to urban areas. This is because villagers are affected by rugged terrain, still they are not having the facility of good roads, availability of water for irrigation and other needs. It is really difficult to survive in villages. Out of that unemployment and poverty are also effecting the growth of population.

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