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Changes of population scenario of Himachal Pradesh, India From 1981 to 2011

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Abstract

The population of Himachal Pradesh has been increasing unabatedly since last four decades. The present paper attempts to analyze the trends in population size, density and its growth in the study area during the study period. The study is based upon secondary data. It discusses the changing scenario of population size, density and growth during the four census years (1981, 1991, 2001 and 2011). The study reveals that the population has been increasing continuously and unevenly from 1980s to 2011. The distribution of population presents an inverse correlation between area and population during the study period, because geographically small districts are supporting more population and vice-versa. The study brings out that population density has also been increased over the period. The density of population also presents an inverse correlation between area and population during the study period, because geographically small districts support more human population and vice-versa. The overall growth of population has registered 60.16% increase between 1981-2011.

Key worlds: *1.Population Growth, 2.Density, 3.Distribution and 4.Spatio-temporal Analysis.*

Introduction

Population studies have long been the subject of concern for social scientists including demographers and geographers. Although traditionally, geography has been classified into physical and human geography, yet the place of man in geography has been a matter of academic dispute (Clarke, 1965:1) among the geographers themselves (Chandna; 2005:1). The analysis of population size, growth and density holds immense significance for population geographers. Demographic characteristics act as key source to understand the demographic character of an area. Himachal Pradesh is now home to 68, 56,509 persons as per the provisional figures of Census 2011 released by the Home Ministry of India. It constitutes about 0.57% of the total population of the country. Hence, Himachal Pradesh is one of the less populous states of India. An overwhelming proportion of the state's population constituting about more than 85% lives in rural areas. This indicates a massive dependence on agriculture and other related activities.

Objectives of the study

The present study tends to examine the following two fold objectives:

1) To examine the trends in size, growth and density of population in Himachal Pradesh.
2) To analyze the spatial variation in population size, growth and density of population in the study area.

Database

The present study is based on secondary data. The data relating to population size and growth for four census years i.e. 1981, 1991, 2001 and 2011 have been collected from Directorate of Census Operations, Himachal Pradesh.

Methods of study

Following methods have been employed to accomplish the present study:

The population size has been examined by considering the absolute population. However, the relative proportion of total population of each district has been computed by employing the following formula:

$$\text{Per cent Population per Unit} = \frac{\text{Total Population of the District}}{\text{Total Population of State}} X100$$

The Population density for all four census years has been computed with the help of following formula and expressed in terms of persons per sq km

$$\text{Population Density} = \frac{\text{Total Population}}{\text{Total Area}}$$

The growth of population in terms of percentage is generally calculated by dividing the absolute change by the population of an earlier period and multiplying it by hundred. The formula is as follows:

$$\text{Population Growth} = \frac{\text{Current Year Population - Base Year Population}}{\text{Base Year Population}} X100$$

The Spatial variations have been shown through tabular methods and choropleth maps prepared on GIS platform.

Study area

Himachal Pradesh is a hilly and mountainous state which is separated by Siwalik hills from the monotonous plains of Punjab. Geographically, Himachal Pradesh is located between 30^0 22' 44" N to 33^0 12' 44" N latitude and 75^0 45' 44" E to 79^0 04' 20" E longitude. It covers about 1.69 % of total area of India and about 10.54 % area of the Himalayan region. Presently, the study area comprises of 12 districts namely Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Mandi, Lahaul-Spiti, Shimla, Sirmaur, Solan and Una. The study area is traversed by Siwalik, Dhauladhar, Pirpanjal, Zaskar, and Great Himalayan ranges. The physiographic structure of the state has a very significant bearing on its demographic character and agro-climatic conditions.

Results and discussion

Himachal Pradesh is one of the less populous states of India. Table 1 reveals that total population of Himachal Pradesh was 42.80 lakh in 1981. It increased to 51.70 lakh in 1991, 60.77 lakh in 2001 and 68.56 lakh during next decade. The study shows that there has been regular addition in the absolute population of Himachal Pradesh during the study period. The study indicates that spatial distribution of population was highly uneven in 1981 (Table 1). Kangra district had the largest population which constituted a little less than one fourth of total population of the state. It was followed by Mandi (15.06%), Shimla (11.93%) and Hamirpur (7.42%) districts. These four districts together accounted for about 58% of total population of the state in 1981. About 38% of people lived in two districts namely Kangra and Mandi alone.

The uneven nature of the distribution of population became more evident from the fact that Lahaul-Spiti and Kinnaur districts together share 36.37 % of the state's area but supported merely 2.13% of total population of the state in 1981. The study indicates little relationship between area and population. It may be attributed to inhospitable, highly rugged terrain and harsh climatic conditions of these two districts of Lahaul-Spiti and Kinnaur.

Table 1
Study area: district wise population and its growth 1981-2011

Districts	Population				Growth of Population			Overall Growth
	1981	1991	2001	2011	1981 - 1991	1991 - 2001	2001-2011	1981-2011
Bilaspur	247368 (5.77)	295387 (5.71)	340885 (5.60)	382056 (5.57)	19.41	15.4	12.07	54.44
Chamba	311147 (7.26)	393286 (7.60)	460887 (7.58)	518844 (7.56)	26.4	17.19	12.57	66.75
Hamirpur	317751 (7.42)	369128 (7.13)	412700 (6.79)	454293 (6.62)	16.17	11.8	10.07	42.97
Kangra	990758 (23.14)	1174072 (22.70)	1339030 (22.03)	1507223 (21.98)	18.5	14.05	12.56	52.12
Kinnaur	59547 (1.39)	71270 (1.37)	78334 (1.28)	84298 (1.22)	19.69	9.91	7.61	41.56
Kullu	238734 (5.57)	302432 (5.84)	381571 (6.27)	437474 (6.38)	26.68	26.17	14.65	83.24
Lahaul-Spiti	32100 (0.74)	31294 (0.60)	33224 (0.54)	31528 (0.45)	-2.51	6.17	-5.10	-1.78
Mandi	644827 (15.06)	776372 (15.01)	901344 (14.82)	999518 (14.57)	20.4	16.1	10.89	55.00
Shimla	510932 (11.93)	617404 (11.94)	722502 (11.88)	813384 (11.86)	20.84	17.02	12.57	59.19
Sirmaur	306897 (7.16)	379695 (7.34)	458593 (7.54)	530164 (7.73)	23.72	20.78	15.60	72.74
Solan	303335 (7.08)	382268 (7.39)	500557 (8.23)	576670 (8.41)	26.02	30.94	15.20	90.10
Una	317422 (7.41)	378269 (7.31)	448273 (7.37)	521057 (7.59)	19.17	18.51	16.23	64.15
H P Total	**4280818 (100)**	**5170877 (100)**	**6077900 (100)**	**6856509 (100)**	**20.79**	**17.54**	**12.81**	**60.16**

Source: Directorate of census operations, himachal pradesh, figures in parentheses show the percentage to total population

Table 2
Study area: district-wise population density
1981-2011

(PERSONS PER SQ KM**)**

Districts	1981			1991		2001		2011	
	Total Population	Total Area	Population Density	Total Population	Population Density	Total Population	Population Density	Total Population	Population Density
Bilaspur	247368	1167	211	295387	253	340885	292	382056	327
Chamba	311147	6515	47	393286	60	460887	70	518844	79
Hamirpur	317751	1118	284	369128	330	412700	369	454293	406
Kangra	990758	5739	172	1174072	204	1339030	233	1507223	262
Kinnaur	59547	6553	9	71270	10	78334	11	84298	12

Kullu	238734	5503	43	302432	54	381571	69	437474	79
Lahaul-Spiti	32100	13693	2	31294	2	33224	2	31528	2
Mandi	644827	3951	163	776372	196	901344	228	999518	252
Shimla	510932	5131	99	617404	120	722502	140	813384	158
Sirmaur	306897	2826	108	379695	134	458593	162	530164	187
Solan	303335	1937	156	382268	197	500557	258	576670	297
Una	317422	1540	206	378269	245	448273	291	521057	338
Total HP	**4280818**	**55673**	**76**	**5170877**	**92**	**6077900**	**109**	**6856509**	**123**

Source: Directorate of census operations, himachal pradesh

The study reveals that spatial distribution of population displays similar uneven pattern in 1991. Kangra, Mandi and Shimla districts maintained the populous status of districts. However, Kangra and Mandi districts experienced slight decline in overall share (22.70% & 15.01%) respectively in 1991.
Solan emerged as the fourth largest populous district in 1991 with 7.39% population. The study reveals that both the notified tribal districts i.e. Lahaul-Spiti and Kinnaur together accommodated less than 2% of the state's population and experienced slight decrease in share of total population of the state. Notably, Lahaul-Spiti district also registered virtual decline in absolute human population from 32100 persons in 1981 to 31294 persons in 1991. It may be attributed to outmigration of tribal people mainly educated ones to non-tribal areas of the state. Table 1 reveals that Kangra, Mandi, Shimla and Solan have been observed as the largest populous districts in 2001 which together constituted about 57% of total population. Kangra district alone supported about 22% of total population of the state. The tribal districts Kinnaur and Lahaul-Spiti experienced slight decline in overall state's share and together accommodated merely 1.82% of total population of the state. Kangra, Mandi, Shimla and Solan have been observed as the largest populous districts in 2011 which together constituted about 56% of total population. Kangra district alone supported about 21% of total population of the state. The tribal districts Kinnaur and Lahaul-Spiti again experienced slight decline in overall state's share and together accommodated merely 1.82% of total population of the state.A closer analysis of census data shows that almost all the districts of Himachal Pradesh reveal an uneven share not only in total population size but also in area. Lahaul-Spiti is the largest district and accounts for about one-fourth of total area of the state. However, it accommodates even less than 1% of the state's population.

Density of population

The density of population expressed as number of persons per unit area helps in understanding the spatial distribution of population in relation to land. Table 2 reveals that overall population density in the study area has witnessed a gradual increase from 76 persons per sq km in 1981 to 92 persons per sq km in 1991. It further increased to 109 persons per sq km in 2001. During the 2011 Census, the population density has also been increased to 123 from 109 persons per sq km over the period.

The study reveals that with every successive Census, the growth of population results in crowdedness. It is due to the fact that although population increases continuously, area cannot be expanded. The dependence on agriculture continues to be high. Table 2 indicates remarkable spatial variations in population density in 1981 in the study area. The population density varies from lowest 2 persons per sq km in Lahaul-Spiti district to highest 284 persons per sq km in Hamirpur district. The districts namely Hamirpur, Una and Bilaspur bordering Punjab plains were densely populated which supported more than 200 persons per sq km. The four districts namely Kangra, Mandi, Solan and Sirmaur also adjoining the Punjab plains except Mandi district and having relatively less mountainous topography had population density ranging between 100-200 persons per sq km. The population density was very low i.e. less than 100 persons per sq km in remaining 5 districts namely Chamba, Kullu, Solan, Kinnaur and Lahaul-Spiti. These districts are located in the mountainous areas of the north, central and north-east part of Himachal Pradesh. The influence of natural and environmental factors such as relief structure, climate, water supply, soil fertility and agricultural productivity is quite clear on the variations in the density of population in Himachal Pradesh.

Table 2 show the considerable rise in population density in almost all the districts except Lahaul-Spiti and Kinnaur districts. The population density remained same i.e. 2 persons per sq km in Lahaul-Spiti district in 1991 whereas Kinnaur district has registered 10 persons per sq km i.e. addition of 1 person per sq km in a decade. Four districts namely Kangra, Hamirpur, Bilaspur and Una located in mid-western part of Himachal Pradesh supported more than 200 persons per sq km. The study shows that four districts namely Mandi, Shimla and Sirmaur located in southern part of Himachal Pradesh have 100-200 persons per sq km. Remaining four districts which include Kullu, Chamba, Lahaul-Spiti and Kinnaur located in

central and north-west and north-eastern part of state had generally low density of population i.e. less than 100 persons per sq km.

Table 2show a clear rise in population density in 2001. It is evident that six districts located in western part of Himachal Pradesh have registered real crowding of people where the density of population is well above 200 persons per km$^{2.}$ However, the density is as high as 369 in Hamirpur district in this category. It may be attributed to small geographical area and growing urbanization in these districts. Population density ranging between 100-200 persons per sq km^2 is found in two districts which include Sirmaur and Shimla. The remaining four districts including Chamba, Kullu, Kinnaur and Lahaul-Spiti have shown less population pressure i.e. less than 100 persons per sq km.

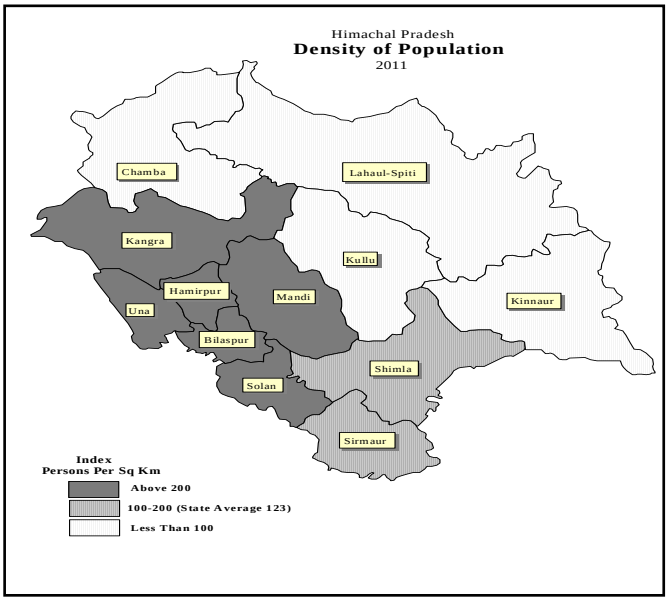

Figure 1

Table 2 and fig. 1 show a clear rise in population density (123 persons per km^2) in 2011. It is evident that six districts located in western part of Himachal Pradesh have registered real crowding of people where the density of population is well above 200 persons per km$^{2.}$ However, the density is as high as 406 in Hamirpur district in this category. It may be attributed to small geographical area and growing urbanization in these districts. Population density ranging between 100-200 persons per sq km^2 is found in two districts which include Sirmaur and Shimla. The remaining four districts including Chamba, Kullu, Kinnaur and Lahaul-Spiti have shown less population pressure i.e. less than 100 persons per sq km.

Trends in population growth

Table 1 reveals that total population of the study area increased from 42.80 lakhs in 1981 to 51.71 lakh in 1991 at the growth rate of 20.79 %. The highest growth rate of population (26.68%) has been observed in Kullu district followed by Chamba (26.40%) district. Three other districts namely Solan, Sirmaur and Shimla also registered high growth rate than study area average (20.79%). The remaining districts except Lahaul-Spiti registered less growth rate than study area average between 1981-91. It is disheartening to note that Lahaul-Spiti district inhabited by tribal people has experienced negative growth rate of population (-2.51%) during 1981-91. It may largely be attributed to outmigration of people from the district. Table 1 reveals that population of Himachal Pradesh has increased at the growth rate of 17.54% between 1991-2001. The study brings out that four districts namely Solan, Kullu, Sirmaur and Una experienced a higher growth rate than study area average over the period 1991-2001. The highest growth rate (30.94%) has been observed in Solan district. Remaining eight districts have registered growth rate less than study area average. The study reveals that three districts namely Kangra, Kinnaur and Lahaul- Spiti have recorded less than 15 % growth rate over the period 1991-2001. Unlike

1981-91, the population of Lahaul-Spiti district also grew positively at 6.17 % growth rate between 1991-2001. The study exhibits that this is the only district where population has grown at a very slow rate. The population of Himachal Pradesh has increased, but it has experienced little bit decline in its growth rate (12.81%) between 2001-2011. The study brings out that four districts namely Una, Solan, Sirmaur and Kullu experienced a higher growth rate than study area average over the period 2001-2011. The highest growth rate (16.23%) has been observed in Una district. A lot of decline has been registered in the growth rate of Solan district of the study area, earlier which was ranked highest growth rate. Remaining eight districts have registered growth rate less than study area average. The study reveals that three districts namely Kangra, Kinnaur and Lahaul- Spiti have recorded less than 15 % growth rate over the period 2001-2011. Again it is disheartening to note that Lahaul-Spiti district inhabited by tribal people has experienced negative growth rate of population (-5.10%) during 2001-2011. Table 1 and fig 2 also exhibit the spatial distribution of overall growth of population during the study period (1981-2011).

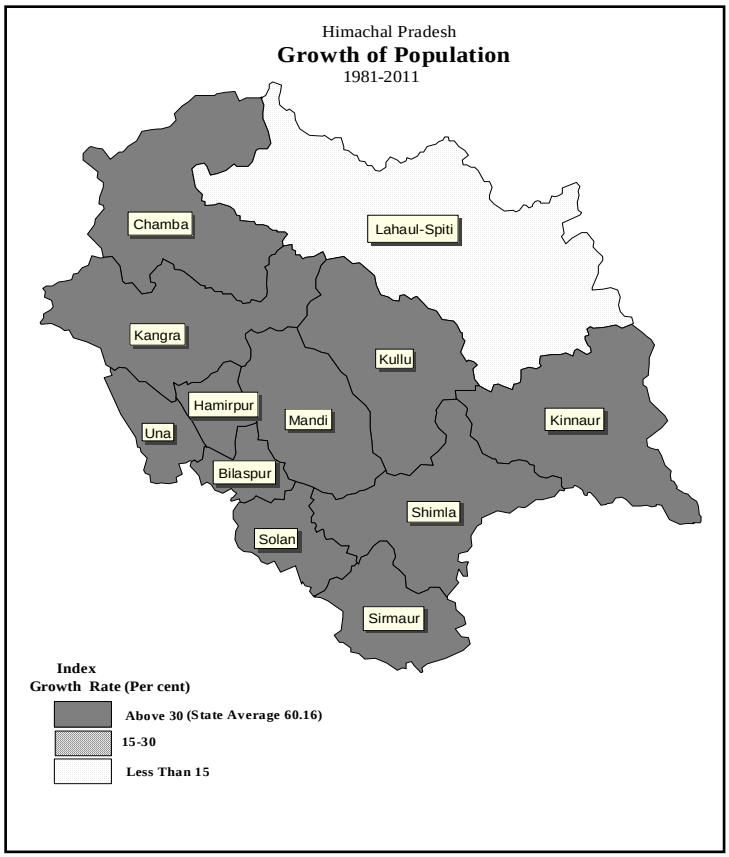

Figure 2

Sum up

It is quite clear from the preceding discussion that a lot of changes have been recorded in the various demographic elements of the state. The study reveals that the population has been increasing continuously from 1980s to 2011. The 1981 Census indicates that the population distribution was highly uneven. Kangra district constituted the largest proportion of the population of the state. The study reveals that the high concentration of population was observed in two districts namely Kangra and Mandi. The tribal districts namely Lahaul-Spiti and Kinnaur constitute a large part of the total geographical area of the state which is nearly about 36.37% but accommodated merely 2.13% of total population of the state during 1981. The similar pattern of uneven spatial distribution of population also prevailed in 1991. The high concentration of population was observed in four districts namely Kangra, Mandi, Shimla and Hamirpur. But Lahaul-Spiti district recorded a decline in its population over the period 1981-1991. It

happens due to out-migration of tribal people largely educated to other parts of the state. This ever increasing trend of population continued in 2001 and even in 2011 also. The distribution of population presents an inverse correlation between area and population from 1980s to 2011. Because geographically small districts are supporting more population and the districts covering a large proportion of the total geographical area of the state accommodate less population.

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