

Demographic Attributes and Population Dynamics: Study from Himalayan State of Uttarakhand, India

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ABSTRACT: Human is the only constituent of the natural environment, provides meaning to other attributes of the natural environment surrounding it; including all the living and non-livings. All other things present in any area or region are only vague and inert things without population, leaving flora and fauna of that area or region. In real sense population, provides meaning to the matter and materials of the places. In the mighty Himalayan ranges of Uttarakhand various dynasties flourished in the past and a significant number of the population still find shelter here; landscape diversity, widespread weather and climatic conditions, available resources, and infrastructure, etc. widely decide density and distribution of the population in the state. A unique mixture of inhabitants from diverse parts of India and neighboring countries as Nepal, Tibetan region, etc. and diverse religions, ethnic groups, and races flourished here together. Presently unbalanced and dramatic population growth is causing huge problems for the economic and environmental sustainability in the Himalayan state. However, presently reverse phenomenon is in the process. The state is witnessing both decreased and negative population growth mainly in the backward and rural area whereas cities are facing the problems of crowded population. Out-migration is gaining pace in the state, in the form of rural to urban, district-to-district, and state-to-state migration for them; reasons may be diverse. The present paper is an endeavor to study the demographic characteristics, composition, and population dynamics in the state in the mirror of cause and effect relationship with the futuristic approach.

Keywords: Demographic attributes, Himalayan state of Uttarakhand, natural environment, population dynamics, unique mixture of inhabitants.

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I. INTRODUCTION

Human is a special biological creature; his evolution is an extraordinary phenomenon of nature. It is also true that human is a cultural agent, as well as the creature of all the cultures and cultural regions over the earth. The population is the basic element of the state [Tiwari, 2004, 751]. Francis Bacon (1612) used the word 'population' [Tripathi, 1999, 1]. In general, Population is 'a group of individuals of the same species within a community' [Mayhew, 2009, 394] or often defined by demographers according to the specific needs of the research and researcher [Ali, 2011]. Specifically, the population is a group of individuals of a single species having the same habitat and they can interbreed [en.wikipedia.org, 2017]. In other words, 'population' mean the people living within a political or geographical boundary [en.wiktionary.org, 2017]. Here the population is very much concerned with the group of humans, the human population, or the peoples living in an area, region, state or country over the earth. In sociology, population refers to the collection of humans. Without population or humans, other physical elements of the places are meaningless. Population (man) is the point of reference from which other elements are observed and from which they drive significance and meaning and focused on regional differences prevalent in populations of the earth [Trewartha, 1969, p.71, 87]. Population studies have a very old history in the form of numbers, evolution, spread and demographic characteristics, their distribution and density and changes, mainly concerned with the various branches of social and natural sciences. Geographers are also very much anxious about the study of population features viz. race, caste, and customs, distribution, density and dynamics over space and in time. Population mapping has a long tradition in geography [Verma, 2016]. The population is the most potent resource, which can alter the entire face of the country if utilized precedently [Tiwari, 2004, 751]. The study of population features; whether, physical, social, or economic and population distribution in space and time and its dynamics precisely, known as Population Geography; a sub-branch of Human Geography comes under the broad umbrella of the art and science of Geography. In the expression 'population geography', the term 'population' signifies the subject matter and 'geography' refers to the

perspective of investigation [Verma, 2016]. Thus, population geography can be classified as the 'study of population in spatio-temporal perspectives'. Etymologically, population geography implies the investigation into the human covering of the earth and its various facets with reference to the physical and cultural environment [Verma, 2016]. Population Geography is the study of human populations; their composition, growth, distribution, and migratory movements with an emphasis on the last two [Mayhew, 2009, 395] or the spatio-temporal expressions of population features. Geography of the population is one of the recent sprouts from the venerable trunk of the science of geography [Chandna, 2014, 2]. Each population has a unique physical distribution in time and space [Meyer, 2016]. J.I. Clarke, 1965 portrays that the centre of population geography must contain populations' absolute numbers, physical and social features and population dynamics [Clarke, 1965]. Population migration studies are the integrated part of geographical studies and included in the scope of Population Geography. Birth and death rates are the most important determinants of population growth; in some countries, net migration is also important [Pandey, Tiwari & Chaubey, 2015]. In addition to changing the size and geographic distribution of a population, migration affects a population's fertility, mortality, and the age and sex structure. Migration also influences the economies of the places of origin and destination [Bera, 2003]. Along with technological progress and scientific discovery, it was the demographic change that separated the modern world from the more distant past [Scheidel, 2006]. Human population has a prominent physical distribution over space and in time having the peoples of different age-groups, size, densities, social values and developmental stages and these characteristics of the population are dynamic in nature and likely to change; these changes may be either positive or negative. Changes in population structure, size and composition are included in the studies of population dynamics. Population dynamics refers to the way in which the size and age structure of population change over time [Encyclopedia. com, 2017]. The study of population dynamics focuses on these changes how, when, and why they occur [Meyer, 2016]. In pre-modern societies, population size was the best indicator of economic performance [Scheidel, 2006] this fact is still true in many societies of the world and economic development still much depends on the population size of the countries and states on the other side health and longevity are very consequential for economic performance [Bloom, 2011].

Zelinsky (1966), also focused on population dynamism in his book 'A prologue to Population Geography'. Population dynamics, particularly in the context of continual variations, will have the foremost influence on developmental processes in the future decades and they challenge the competency of countries to accomplish broad sustainable developmental goals. Population dynamics is the study of the numbers of populations and the variations of these numbers in time and space [Mayhew, 2009, 394]. Population projections are another important aspect and tools of population Geography and geographers; help to understand the future population and resource relations, needs of the future societies and provide base to future development planning. Population projection is 'a method to estimate the future population and its growth [Tiwari, 2004, 757]. Population projection is an important tool for planning and policy formulation [Das, N.A., 11]. Knowledge of human adaptation in the Himalayas developed more slowly (Fricke, 1989, 131). Recently population studies have gained pace in the whole Himalayan region. The need felt due to changing weather and climatic conditions, degrading and depleting natural resources, biodiversity, and newly growing unemployment and livelihood constraints, severe out migration of the Himalayan peoples are also the major concerns. Increasing demands of environmental and ecosystem understandings to achieve sustainable developmental goals for present and future generations in broad frame of man and environment relations are creating the pressure to study and explore the human adaptation in Himalayan region and changing population features. Population in Uttarakhand is of very diverse characteristics; contains peoples of diverse races, castes, customs and traditions accompanied by variable economic conditions viz. nomadic herding, subsistence agriculture, transhumance, very sophisticated horticulture, dairying and economically driven food crops and vegetable cultivation, etc. However, selection and prospects of peoples are determined by their access to health and education as well as economic gains for running life smoothly [Anonymous, 2012]. The problem of population explosion in the whole Himalayan region was noticed decades ago [Apollo, 2017].

Populations in Uttarakhand is also facing the problems of livelihood, under and over population, lack of infrastructure viz. roads, railways, hospitals, education and unemployment in various forms. Being a hilly region problems are very diverse as compared to other regions and state in India. Distribution and density of population in Uttarakhand are highly varied in nature. The pattern of population in a region are, in fact, conditioned by a variety of factors [Joshi, 2004, 105] in Himalayan region these factors are enormous; landscape diversity, highly variable weather and climatic conditions, diverse traditions, caste, creed, and aspirations followed by the peoples in the region. Dramatic unbalanced growth may pose a huge problem for peoples itself and to the natural environment and ecosystem in Himalayan region, more precisely in Uttarakhand. Study is mainly concerned with the State of Uttarakhand after the year 2000. Need of the study arises from the fact that after gaining the status of separate state in 2000; Uttarakhand is seeing huge socio-economic transformations of population; as some parts of the state are witnessing population concentration and some are facing the problems of decline population so the population imbalances are inevitable.

II. OBJECTIVES

The main objectives of the this paper are to study the demographic features viz. population structure, composition, distribution and population dynamics in Uttarakhand with their causative factors in space and time, and projection and approximation of population scenario in coming decades and to provide suggestions to cope up with the increasing population and sustainability problems in the state.

III. MATERIAL AND METHODS

The study primarily seeks bases on secondary data collected from various sources as census, statistical diary of Uttarakhand, and various online sources, etc. Explanatory and analytical approaches have been adopted to discuss the data. Decadal Growth rates, Average Annual Exponential Growth rate of the population and projections have been done with the help of appropriate mathematical and statistical formulas. Various cartographic techniques have been applied to make the data presentable and easily understandable. Formulas used for the calculation are as:

$$1. \text{Decadal Growth Rate in \% (DGR)} = \left(\frac{P_n - P_o}{P_n} \right) \times 100$$

Where, P_n = Population now; P_o = Population Originally; (P_n and P_o are ten year apart).

$$2. \text{Annual Growth Rate (R)} = \left[(P_n \div P_o)^{\frac{1}{N}} \right] \times 100$$

Where, P_n = Population now; P_o = Population Originally; N = Interval between P_n and P_o in years.

$$3. \text{Projected Growth (Pf)} = P_n(1 + r)^N$$

Where, P_n = Population now; r = Annual Growth Rate in Decimal; N = Interval between P_n and P_f in years.

IV. STUDY REGION

Uttarakhand, the 27th state of India; located in the mighty Himalayas; lies between 28^o43' and 31^o27' North latitudes and 77^o34' and 81^o02' East longitudes (Fig.1.1); famous for its natural beauty, and for panorama of various physical features and landscapes. State of Uttarakhand comprises 13 districts in its territory presently and surrounded by the Tibetan region in North, Nepal in East, and Indian states of Uttar Pradesh in South, Himachal Pradesh in West and north-west and Haryana in southwestern part.

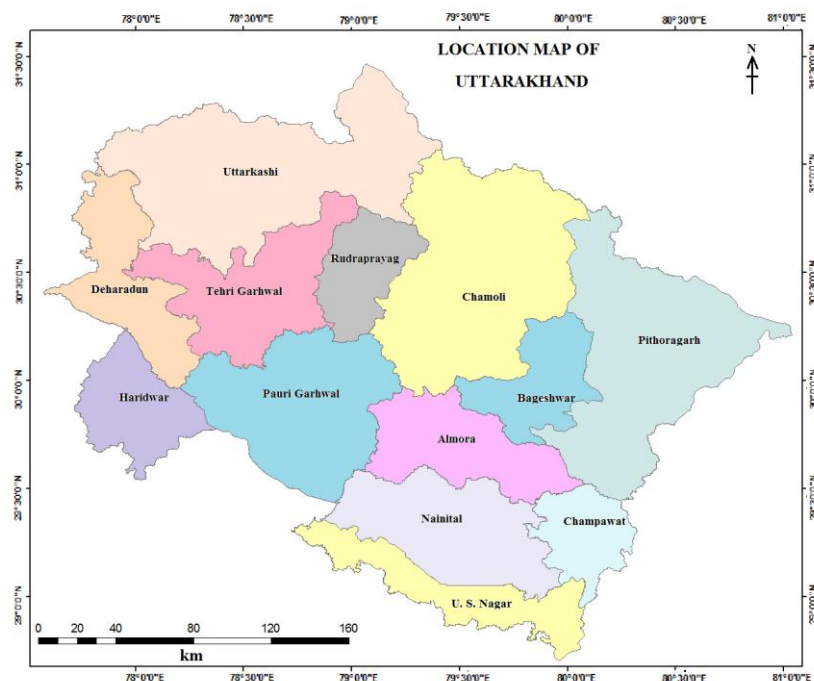


Fig. 1.1: Location map of Uttarakhand

The relief of the state varies from about 200m to above 7800m of height from m.s.l. State comprises two divisions, namely Kumaun and Garhwal, spread in about 53,483sq.km sq.km of geographical area. Out of the total geographical area, mountains and hills cover about 46,035 sq.km of area, while 7,448sq.km area of the state territory is occupied by *tarai* and *bhabhar* plains. Physio-graphically, the state comprises three parallel zones of Himalayan Mountains, the highest zones is the Greater Himalaya; consists of huge line of snowy peaks with an average height of 6100m. The middle Himalayan region is an intricate mixture of forest covered ranges and narrows but productive river valleys, plentiful gorges and uneven mountains. The third zone is of outer

Himalaya famous by the name *Siwalik* ranges and foothills; characterized by extensive smooth valleys in the neighborhood called as ‘Duns’. *tarai* and *bhabhar plains* lies in the south of the foothills. Very few districts of the state encompass plane landscape. The state, having subtropical type of climatic conditions prevalent in the southern foothills with an average temperature of 25⁰C, while temperature remains below freezing point at the elevations above 6000m and the area remains permanently covered with snow and ice throughout the year. Rainfalls significantly show inconsistency in the state as districts of *tarai*, and *bhabhar plains* and valleys receive high rains, whereas elevated peaks witness rainfall in the form of snow.

V. RESULT AND DISCUSSION

Table 1.1: Structure and composition of population in Uttarakhand

Population Features	Year		Decadal Growth (2001-2011) (in %)
	2001	2011	
Total population	8489349	10086292	18.81
Sex Ratio	962	963	0.10
Child Sex Ratio	908	890	-1.98
Population Density	159	189	18.87
Total Child Population (0-6) Age	1360032	1355814	-0.31
Male (0-6) Age	712949	717199	0.60
Female (0-6) Age	647083	638615	-1.31
Total Literate Population	5105782	6880953	34.77
Literate Male	3008875	3863708	28.41
Literate Female	2096907	3017245	43.89

Source: Census of India, 2001 & 2011 and statistical book of Uttarakhand

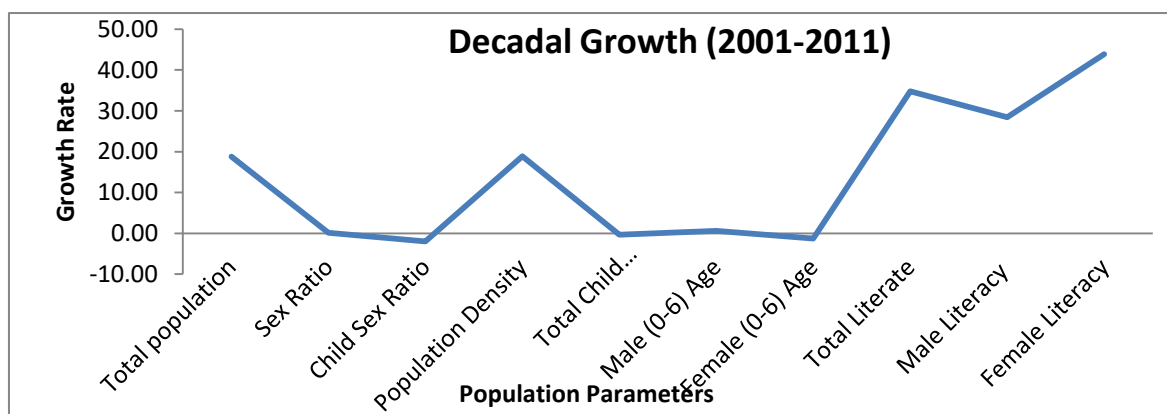


Fig. 1.2: Decadal growth of various population parameters

Table 1.1 depicts the structure and composition of the population of the Himalayan state of Uttarakhand. Structure and composition of the population are the important equipments of population dynamics studies and the vital variables of the population; determine the socio-economic conditions and developmental stages of the societies and also demarcate and decide the processes and levels of resource utilization. Unbalanced structuring and composition of population create several problems in sustainable societal setups and hinder ongoing developmental processes in time and space. In the year 2001, the total population of the state was 8489349 persons, which increased to 10086292 persons in the decade 2001-2011 with the decadal growth rate of 18.81 per cent (Table 1.1 & Fig. 1.2). It is slightly higher than the decadal population growth rate of India, which is only 17.64 per cent during the same time span i.e., from the year 2001 to 2011. Sex ratio of the Uttarakhand state is 963 females per thousand males; a sign of healthy, educated and developed society, is better than the country’s sex ratio, which is only 940 females per thousand males (Census, 2011).

Overall sex ratio of the state is increased by 0.10 per cent during the decade 2001-2011 i.e., from 962 females per thousand males to 963 females per thousand males. Whereas, child sex ratio, which was 908 females per thousand male child in the year 2001, showed negative growth of -1.98 per cent and reduced to 890 females per thousand males in the year 2011. Further, it is noticed that during the decade of 2001- 2011, total

increase of male population (0-6) age group is by 0.60 per cent, whereas negative growth of female child of (0-6) age group has been noticed and the decline is by -1.31 per cent (Table 1.1 & Fig. 1.2). This scenario is not overwhelming for the state, as it will surely lead an unbalanced sex ratio in near future with numerous societal problems and gender conflicts in the state.

State has shown healthy positive changes in literacy of the population and the literacy rate of the state has been increased by 34.77 per cent during the decade 2001- 2011 (Table 1.1 & Fig. 1.2). Literacy rate of the state is 79.6 per cent (in 2011) of the total population and is far better than the country's literacy rate, which is only 74.0 per cent according to the census of the year 2011 (Census, 2011). It is important to mention here that higher levels of educational facilities aid population migration and play an important role in population dynamics and both education and population migrations are important components of population dynamics studies. Population density of the Uttarakhand state is increased by 18.87 per cent during the last decade i.e., from year 2001 to 2011 (Table 1.1 & Fig. 1.2). Population density is increasing rapidly in those districts, situated in smooth terrain as compared to the districts of hilly and rugged terrain. This process is creating increasing population pressure on available natural resources in some districts of the state as in Haridwar, U. S. Nagar, Nainital, and Dehradun (mainly in *tarai* and *bhabhar* plains) etc. Whereas, some districts like, Bageshwar, Pithoragarh, Champawat, Tehri Garhwal, Chomoli and Uttarkashi are showing reduced rate of population increase. While, Almora and Pauri Garhwal both the two districts of the state are showing negative trends of population growth as well as of population density i.e., both are declining. Density of population ensures distribution of resources, status of their use and utilization, as the optimum resource utilization in an area or region demands optimum population in that area or region too. Natural resources as soil, water and forest are the only resource of the Uttarakhand state as other minerals etc. are very exceptional in the state. From Table 1.1 & Fig. 1.2 it is also clear that overall density of the population is changing slowly but positively.

Table 1.2: District wise decadal growth of population in Uttarakhand

District	Population		Decadal Growth (2001-2011) (in %)
	2001	2011	
Uttarkashi	295013	330086	11.89
Chamoli	370359	391605	5.74
Tehri Garhwal	604747	618931	2.35
Dehradun	1282143	1696694	32.33
Pauri Garhwal	697078	687271	-1.41
Rudraprayag	227439	242285	6.53
Pithoragarh	462289	483439	4.58
Almora	630567	622506	-1.28
Nainital	762909	954605	25.13
Bageshwar	249462	259898	4.18
Champawat	224542	259648	15.63
U.S. Nagar	1235614	1648902	33.45
Haridwar	1447187	1890422	30.63
Total	8489349	10086292	18.81

Source: Census of India, 2001 & 2011 and statistical book of Uttarakhand

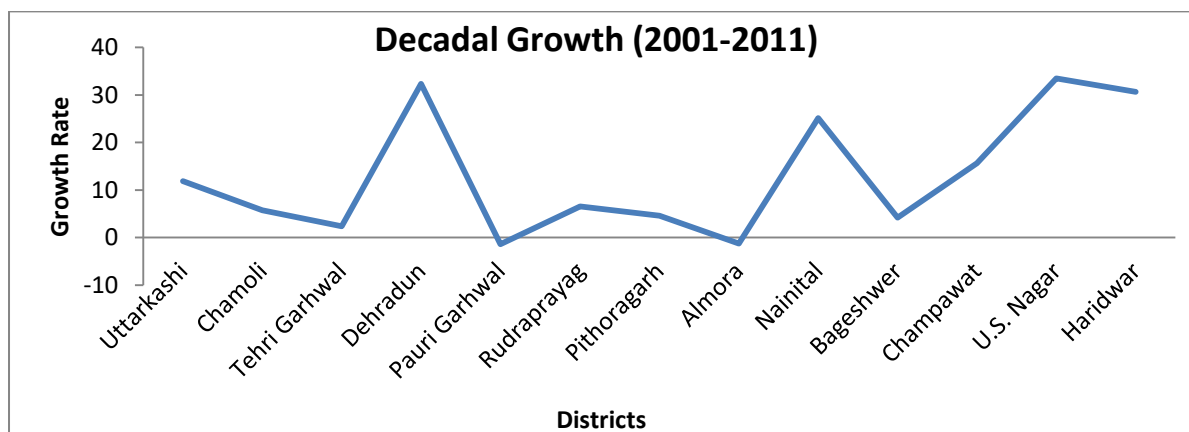


Fig. 1.3: District wise population growth in Uttarakhand

Table 1.2 & Fig. 1.3 explain the district wise decadal population growth of the Uttarakhand state for the decade 2001-2011 and show that overall increase in the population of the state is by 18.81 per cent in the above said decade. Decadal population growth rates are very high in districts with plane and smooth topography i.e., in plains of *tarai* and *bhabhar* region, as in U.S. Nagar (33.45 per cent), Haridwar (30.63 per cent), Dehradun (32.33 per cent), and Nainital (25.13 per cent). Whereas, Uttarakashi (11.89 per cent), and Champawat (15.13 per cent) showed moderate population increase whereas, district of middle and higher Himalayan regions with steep slopes and tough terrain have shown very less decadal population growth. Districts of Almora and Pauri Garhwal are the exceptions in the sense that both are showing negative decadal growth of population from year 2001 to 2011, which is -1.28 per cent and -1.41 percent, respectively (Table 1.2 & Fig. 1.3).

Table 1.3 shows the annual growth rate of population in Uttarakhand from year 2001 to the year 2011. Taking this trend as base, population projections have done for the whole state with district- wise population projection. Projections are for the year 2021, 2031, 2041, and for the year 2051.

Table 1.3: District wise trends of annual population growth and population projections in Uttarakhand

District	Annual Growth (in %)	Projected Population			
		2021	2031	2041	2051
Uttarkashi	1.13	369328.70	413236.82	462365.01	517333.87
Chamoli	0.56	414069.80	437823.31	462939.46	489496.43
Tehri Garhwal	0.23	633447.68	648304.84	663510.46	679072.72
Dehradun	2.84	2245280.39	2971239.37	3931920.24	5203214.83
Pauri Garhwal	-0.14	677601.97	668068.97	658670.09	649403.45
Rudraprayag	0.63	258100.07	274947.46	292894.56	312013.14
Pithoragarh	0.45	505556.63	528686.15	552873.85	578168.17
Almora	-0.13	614548.05	606691.83	598936.05	591279.41
Nainital	2.27	1194468.42	1494602.27	1870150.70	2340063.11
Bageshwer	0.41	270770.58	282098.00	293899.30	306194.29
Champawat	1.46	300242.64	347184.06	401464.52	464231.45
U.S. Nagar	2.93	2200426.51	2936424.87	3918599.85	5229292.59
Haridwar	2.71	2469408.13	3225722.35	4213675.56	5504212.64
Total	1.74	11983638.12	14237896.61	16916206.72	20098337.41

Source: Based on census of India, 2001 & 2011 and statistical book of Uttarakhand

It can be predicted and estimated easily that population of the state is going to be double (i.e., 20098337.41 persons) by the year 2051, it means only in the time span of 40 years from the population of the year 2011. District wise trends of population projections are highly variable following the present population trends. Population of the Haridwar district will rise in the year 2051 by 2.9 times, U.S. Nagar by 3.2 times, Nainital by 2.5 times and Dehradun by 3.1 times from respective populations of the year 2011 (Table 1.3 & Fig. 1.4).

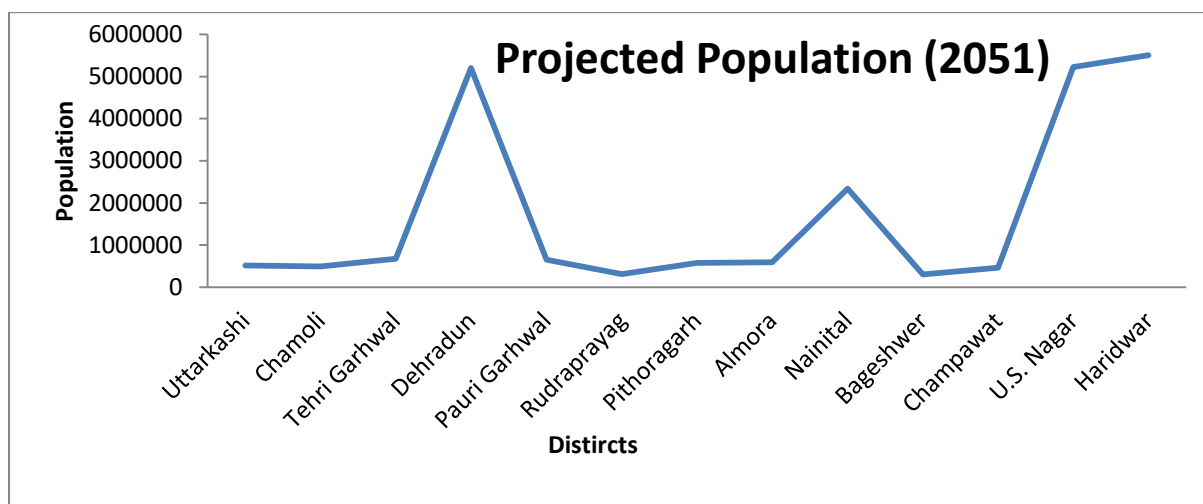


Fig. 1.4: District wise projected population in Uttarakhand

VI. CONCLUSIONS

Present study is concerned with the population features, population dynamics as well as with the population projections in the Himalayan state of Uttarakhand. On the basis of earlier explanations and findings, various conclusions have been drawn and generalizations have been made in the light of cause and effect relationship with predictions and probable solutions of the arising population problems in the state. It can be concluded from the study that decadal growth rate of population in Uttarakhand come down to 18.81 per cent in the last decade (i.e., 2001-2011) from the decadal population growth rate of its previous decade i.e., 1991-2001 that was 20.41 per cent. Decreasing population growth rate may prove advantageous and encouraging for the sustainable development of the state in manifolds, as there would be fewer burdens on available resources of the state and optimum population-resource ratio can be preserved easily. The reasons behind this decreasing population growth rate may be natural or human induced as increasing literacy, lower birth rate due to developing health and hygiene facilities, increased awareness about benefits of small family, increased out migration are adding a lot in present trends of declining population growth rate. However, there is no universal decrease in decadal population growth rate all over the state in spatio-temporal sense as rural areas are witnessing very low population or nearly negligible increase in population leaving some exceptions, whereas more or less all the urban areas in the state are witnessing increasing population pressures. Out-migration; a natural process obligatory for the growth and development of the societies and the result of developmental activities itself in the state is supported by many factors; causes behind such vivid changes are abundant. Districts having plane terrains provide abundance of land, good accessibility and connectivity to rest of the country are developing rapidly and transforming into industrial hubs and inevitable destinations of trade and commerce, and these all also flourishing into educational hubs and centres of health service facilitators. These growing centres of higher orders of services are attracting more population within and from outside the state for the purpose of employment, education, and health services, etc. These all are the centers of residential and recreational activities too, thus peoples are migrating here to avail all such services discussed earlier; immigration is prevalent in these centers. Thus, the populations of these districts and cities are on the increase naturally. Whereas, rough topography, adverse weather and climatic conditions, lack of or underdeveloped natural resources, unemployment, poor health and educational facilities, dying agriculture etc. are heavily working as push factors and forcing population to move out from their native places, mainly from rural areas and poorly developed towns and small cities; emigration are prevalent here. Increased literacy and increasing aspirations towards better life are also forcing younger generations to migrate outward from the state in search of better options of livelihood. Mainly, younger population is migrating out from their native places to towns, cities and other states thus the rural areas of the states are witnessing older population, comparatively. Shares of older population to the total village population in rural areas are increasing continuously and they are living in rural areas on the mercy of nature with very poor health and hygiene facilities, mostly dependent on subsistent type of agriculture. Rural areas are loosing its economic viability and agricultural shares in the economy of the state are on threat. Self-sufficiency, productivity, economic growth and sustainability of the rural areas and villages in the state are at risk. The rural areas in the state are witnessing poor or negative population growth trends which would lead a situation in future that villages may devoid of any population more precisely the younger ones and the cities of the state would surly face the problem of crowded population with poor infrastructural conditions and slums due to heavy population pressures. Sex ratio, another important population factor, has shown slower but positive changes that means from 961 females per thousand males (in 2001) to 962 (in 2011) females per thousand males, a sign of healthier society, but the child sex ratio of 0-6 age group is showing reverse trends from the general in the same decade. The child sex ratio of 0-6 age group population has decreased in the state by -1.98 per cent in the decade 2001-2011. The main culprits of this situation are preference of male child over female one by the newer generations which are literate but full of ill practiced taboos and traditions, societal pressures (mainly of old generations) to prefer male child, developing sex selection techniques and their easy availability, easily available illegal abortion facilities, and female feticide. Decreasing child sex ratio is a problematic and thinkable situation as it would result in poor sex ratio in future and distort the healthier and harmonious societal setups. There must be focus on quality education rather than making society mere literate so that new generation may escape from gender discriminations and child sex ratio can be maintain and upgraded up to a healthy level. It is intricate task to estimate and provide exact population of the places for a long duration of time in such a rapidly changing world's circumstances, affecting each part and every person living on the habitable earth. Changing climate and unpredictable weather conditions, melting glaciers and snowy mountain peaks, degrading and depleting natural resources, population constraints, changing man's perception about nature and economic greed of man, all are disturbing harmonious settings of the ecosystems of the places all around the globe. Uttarakhand is not an exception of all these changes and more prone to them being a mountainous state as mountains are the soft targets of natural and human induced catastrophes. These all changes separately and collectively are deciding the population landscaping and changing nature of population characteristics in the state.

It is estimated that population of the state is going to double by the year 2051. However, changes in present population growth rates, immigration and emigration trends, and alteration in present fertility and mortality rates, which are dynamic in real sense, may produce different results from the expected i.e., population of the state may double rather earlier or with some delay. However, the productivity and economic sustainability of the villages and rural areas are at risk. Cities in the state are going to face the problems of over population, slums with inadequate housing facilities, water and hygienic food, unemployment and inadequacy of infrastructure. These problems may be reduced to some extent by proper planning and management of rapidly developing cities, infrastructural

developments, and by providing proper pace to smaller cities to develop and attract more population as emigration and immigration cannot be stopped totally in any way and will not be justifiable. Sustainable rural development is the prerequisite of the time focusing on environment friendly agriculture and horticultural developments, infrastructural developments viz. roads, water supply, educational institutions and health centres in the locals. Heavy inputs whether technological or financial may prove viable to slowdown the pace of migration. Promotions of household and small-scale industries in the rural areas are the better options and would be supportive. Eco-friendly, green-tourism and in-situ development of the available resources and employment generations would prove helpful to reduce the population problems in the state.

REFERENCE

- [1] Tewari, R.C. (2004). *Geography of India*. Prayag Pustak Bhawan, Allahabad, India.
- [2] Tripathi, R.D. (1999). *Demography and Population Study*. Vasundhara, Gorakhpur.
- [3] Mayhew, S. (2009). *A dictionary of Geography* (4th ed.). Oxford University press Inc., New York.
- [4] Ali, M. (2011). Principles of population & demography. Department of reproductive health and research, World Health Organization, 1-64. Available online at <http://www.gfmer.ch/SRH-Course-2011/family-planning/pdf/Principles-population-demography-Moazzam-Ali-2011.pdf>
- [5] en.wikipedia.org, 2017(<https://en.wikipedia.org/wiki/Population>)
- [6] en.wiktionary.org, 2017 (<https://en.wiktionary.org/wiki/population>)
- [7] Trewartha, G.T. (1969). *A Geography of Population, World Pattern*. John Willey, New York.
- [8] Verma, M. (2016). *Population Geography: Roots, Definition, Nature and Subject Matter*. (Available Online At <http://www.yourarticlelibrary.com/population-geography/population-geography-roots-definition-nature-and-subject-matter/43085/>).
- [9] Chandna, R.C. (2014). *Geography of Population: Concepts, Determinants and Patterns*. Kalyani Publishers, New Delhi.
- [10] Meyer, J. R. (2016). An article on population dynamics. Available online at https://projects.ncsu.edu/cals/course/ent425/library/tutorials/ecology/popn_dyn.html
- [11] Clarke, J.I. (1965). *Population Geography*, Pergamon Press, Oxford.
- [12] Bera, Jorge. A. (2003). Population Dynamics in Latin America, *Population Bulletin* 58(1), 1-40. (Washington, DC: Population Reference Bureau, 2003). Available online at <http://www.igwg.org/Source/58.1PopulDynamicsLatinAmer.pdf>
- [13] Scheidel, W. (2006). Population and demography. Princeton/Stanford working papers in classics, 1-14. Available online at <https://www.princeton.edu/~pswpc/pdfs/scheidel/040604.pdf>
- [14] Seymour, D. Bruce, (2004). Calculating decadal growth rate. Available online at ocresearch.info/sites/default/files/DGR%20Equations_1.pdf
- [15] Encyclopedia, 2017.
- [16] Bloom, D.E. (2011). Program on the global demography of aging. Working paper series population dynamics in India and implications for economic growth, 1-32. Available online at https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1288/2013/10/PGDA_WP_65.pdf
- [17] Zelinsky, W. (1966). *A Prologue to Population Geography*. Prentice Hall, NJ.
- [18] Das, A. et al. (N.A.). Understanding Numbers: Population and Demography, *Booklet-2*, 1-32. Available online at http://www.chsj.org/uploads/1/0/2/1/10215849/booklet_2-_understanding_numbers-_populations_and_demography.pdf
- [19] Fricke, Thomas. (1989). Introduction: human ecology in Himalaya. *Human Ecology*, 17(2), 131-145.
- [20] Anonymous. (2012). Population dynamics. Report of UN system task team on the post-2015 UN development agenda, UNDESA, UNFPA.
- [21] Apollo, Michal. (2017). The population of Himalayan regions – by the numbers: past, present and future, *Contemporary Studies in Environment and Tourism*, Cambridge Scholars Publishing, 145-160. Available online at <https://www.researchgate.net/publication/313849476>
- [22] Joshi, S.C. (2004). *Uttaranchal Environment and Development: A Geo-ecological Overview*. Consul Printers, Nainital.
- [23] www.censusindia.gov.in

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