

Periodic Research

Demographic Structure of Ethnic Tribes in Cold Desert Leh – Ladakh

G. M. Rather

Sr. Assistant Professor
Deptt.of Geography and Regional
Development,
University of Kashmir,
Srinagar, India

Arshad A. Lone

Research Scholar
Deptt.of Geography and Regional
Development,
University of Kashmir,
Srinagar, India

Mushtaq A.Kumar

Research Scholar
Deptt. of Geography and Regional
Development,
University of Kashmir,
Srinagar, India

Abstract

The present study was carried out on demographic structure of cold desert Leh- Ladakh. The analysis of the data reveals that the study area has a total population of 1, 33,487. Near about 77.49 percent of total population is a tribal population and is unevenly distributed. The major tribes are Bhots, Champas, Brokpas, Mons and Arghuns. The average physiological density of population is 260 persons / Km². The overall literacy rate is 70.24 percent and varies among males and females. The average sex ratio is 690 females per thousand males that is less than the national average sex ratio of 943 females per thousand males. Majority of the population was engaged in secondary activities (45.72 %). Birth rate and death rate shows fluctuations with years and there is declining trend in population growth from 1981 onwards.

Keywords: Demographic Structure, Tribal Population, Cold Desert Leh, Physiological Density, Sex Ratio.

Introduction

Population is defined as any finite or infinite collection of individual objects. But in geography it refers to a congregation of human individual objects. The specialized study of population geography, began in early sixties with the presidential address delivered by Trewartha (Trewartha , 1953).

Review of Literature

According to Trewartha the scope of the field should include a treatment of all the variables present in the census schedule of advanced nation. The data used in various disciplines of knowledge. However, the geographical use of data is unique for its being carried on the identification of regional pattern and spatial arrangements and explanation of the processes of the formation of regional patterns and personalities (Zelinsky, 1966). Population distributions are constantly changing as births and deaths occur and as people move (Austin et al 1987). Demography is the study of human populations in relation to the changes brought about by the interplay of births, deaths and migration (Christopher, 1985). Demography is the science of population. Demography is concerned with the quantitative study of the size structure, characteristics and territorial distribution of human populations and the changes occurring in them. Demography is also concerned with the study of the underlying causes and determinants of the population phenomena (Jain, 2014). Demographic analysis focus particularly on studying changes in population in terms of its size, growth rates and composition (Preston et al, 2003). The relationship between education and demographic and social changes is one of interdependence .There is a close and complex relationship among education, marriage age, fertility, mortality, mobility and activity (Srivastava, 2012). Demography performs all the functions, characteristics of a science such as enquiry into cause effect relationships, prediction about the future etc. it uses the scientific methods of observation and analysis. It is a positive science which studies facts both quantitatively as well as qualitatively (Sharma, 2004). Societies around the world are characterized or shaped by their population processes and characteristics (Newbold, 2012).

Aim of the Study

The present study was an attempt to study various demographic aspects of cold desert – Leh Ladakh. The main objective of the study was to describe, analyze and interpret the spatial pattern of population in district Leh.

Conceptual framework

The term population structure usually makes a turning point from the gross and general to the refined and specific. It refers to the distribution

E: ISSN No. 2349-9435

Periodic Research

within a population of one or more individually carried traits and attributes (Howley, 1959). The characteristic groupings which make up the peculiar structure of population at any particular time or its changing structure over a period are known as its composition (Chaddock, 1965). D. J. Boque has sub divided the population composition into four parts, demographic, social, household family and economic characteristics of population (Boque, 1969).

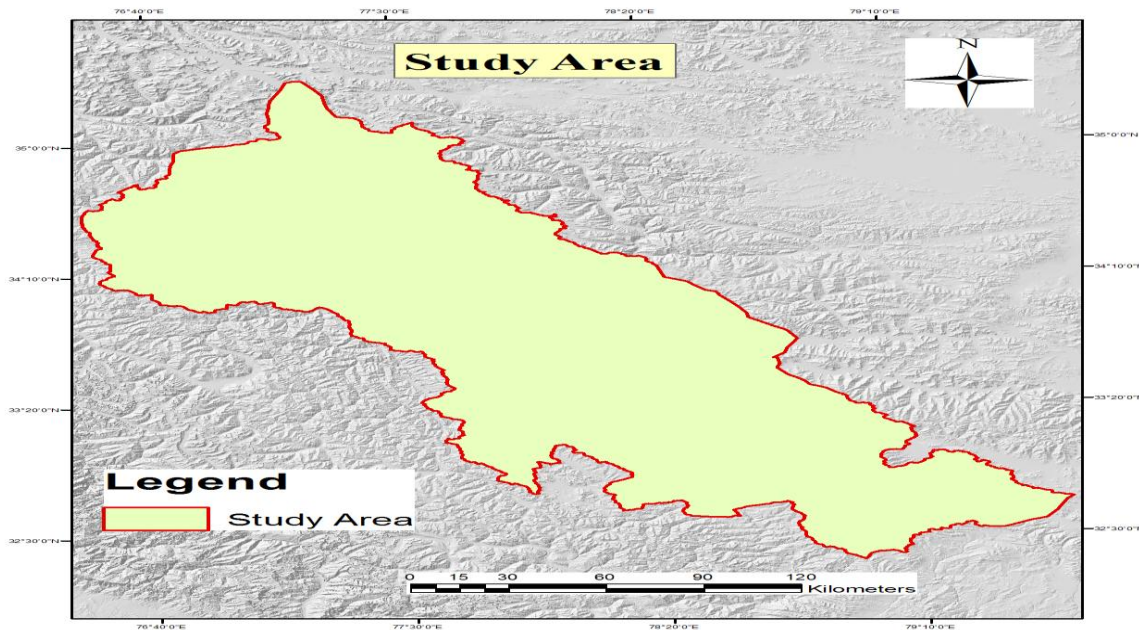
The composition of population refers to those aspects of population which may be measured however, inadequately. Population structure often varies considerably among different nations and also among different sections within a nation. Such variation is the result of a host of factors. The chief among the demographic differentials which play a profound role in shaping the structure of a population are fertility, mortality and migration. Social, cultural, economic and political factors also differentiate population structure sometimes directly and sometimes indirectly (Clarke, 1965). Change and variation in fertility patterns may bring about substantial changes in the age distribution of population. High fertility may cause a population to become progressively younger, whereas, low fertility, by contrast is relatively high and youthful relatively few (Trewartha, 1969). In terms of economic implications the former may lead to a situation in which the burden of juvenile dependents would become abnormally heavy and as a reflex consequences, the proportion of the workforce would contract to subnormal magnitude on the contrary, the later would produce a situation of low burden on dependency and high proportion of a relatively efficient workforce. Mortality also affect the sex

structure of population. High mortality amongst children may lead to low sex ratio, whereas low mortality may induce a high sex ratio (Siddiqi, 1984). Age structure of population of a region may get changed due to migration, even without any substantial change in the numerical magnitude of the population. It is not unlikely that within a specified period, a certain number of one age group may leave an area which about the same number of persons of a different age group may move in. This would mean an almost zero net migration and therefore, no change in the number but the age structure of the local population gets changed (Siddiqi, 1984). Ravenstien (1989) and Lee (1970) have recognized the sex selective character of migrations. The statistical evidences confirms that migrations are generally, male selective.

Study Area

The study area is situated between 32 to 36 degree North latitude and 72 to 80 degree east longitude and at an altitude ranging from 2900 to 5900 Metres. It covers an area of 45110 Km², and is the largest district in the Jammu and Kashmir State. The study area is having 112 inhabited and one un inhabited villages with a population of 1, 33, 487 souls as per 2011 census with Buddhist as the largest religious group followed by Muslims. The majority of the population is tribal and major ethnic tribes are, Bhots, Brokpas, Champas, Mons and Arghuns. The Study area comprises of three sub districts, Leh, Nubra and Khaltsi. There are sixteen blocks of study area namely Leh, Nimmo, Saspool, Khaltsi, Skurbuchan, Lingshet, Diskit, Turtuk, Panamic, Nyoma, Rupshu, Chumathang, Durbuk, Kharu, Chuchot and Thiksey.

Figure 1 : Location Map of Study Area



Data Base and Methodology

The present study is based on both primary and secondary data. Secondary data was collected from different sources like census of India district Handbook Leh, Statistical digest District Leh and

different departments of district Leh. Primary data regarding some components of Demography like age Structure and levels of education were obtained by the field survey through a structured Questionnaire. Block was selected as unit of study. There were 16

E: ISSN No. 2349-9435

Blocks in district Leh. Around 15% of sample villages were selected for the present study comprising one sample village from each Block except two villages from Block Disket and Block Kharu because of having large number of villages, thereby making total number of sample villages as around 18. Near about 10 percent of households (312) in proportion to the total households from each sample village of 16 blocks and 100 households from urban areas comprising of 1.50 per cent of total urban households, were selected for the field survey. The data collected was then analysed statistically and represented graphically.

Results and Discussions

Demographic structure of Cold desert Leh Ladakh can be discussed under the following headings:

Distribution and Density of Population and Households

According to Census of 2011, the total population of Leh- Ladakh is 1, 33,487 persons. Out

Periodic Research

of the total population, 78970 are males and 54516 are females. There is uneven distribution of population in Leh District. Some blocks are having high concentration of population where as some are sparsely populated. The highest concentration of population is in urban wards of Leh (30870 persons) while as lowest concentration of population is in Block Rupsho having 1846 persons (table 1). From the figure 2 it is clear that density of population varies from block to block. Highest density of population is found in Urban wards (2077 persons/sq. km.) while as lowest density is found in Block Panamic (41 persons/sq. km.)) . From the table 1 it is clear that over all household density is 54 . Household density varies from block to block. The highest Household density is found in Block Rupsho (366 Households/ sq. km.), while as lowest Household Density is found in Block Panamic (9 Households/ sq. km.) (Figure 2) .

Table 1: Distribution and Density of Population and Households

Name of Block	Geographical Area in Km ²	Total Population	% Total Population	House holds	% House holds	Persons/ km ²	Household Density
Leh	24.97	18401	13.78	3295	15.04	737	132
Nimoo	18.32	5042	3.78	888	4.05	275	48
Saspol	13.6	3599	2.70	610	2.784	265	45
Khaltsi	15.52	6114	4.58	995	4.54	394	64
Skurbuchan	12.39	4950	3.71	825	3.77	400	67
Lingshet	10.47	2430	1.82	376	1.72	232	36
Disket	35.92	10404	7.80	1715	7.83	290	48
Turtok	10.5	6864	5.14	826	3.770	654	79
Panamic	129.98	5355	4.01	1103	5.03	41	9
Nyoma	6.78	4043	3.03	846	3.87	596	125
Rupsho	0.98	1846	1.38	359	1.64	1884	366
Rongchugat	6.15	2546	1.90	489	2.23	414	80
Durbok	17.77	4721	3.54	820	3.74	266	48
Kharu	40.45	12343	9.25	1599	7.30	305	40
Chusot	33.79	8556	6.41	1759	8.02	253	52
Thiksey	16.31	5403	4.05	1027	4.69	331	63
Urban Areas	14.86	30870	23.12	4377	1.50	2077	295
Total	408.76	133487	100	21909	100	260	54

Source: Census of India, 2011

Figure 2: Population Density of Leh Ladakh

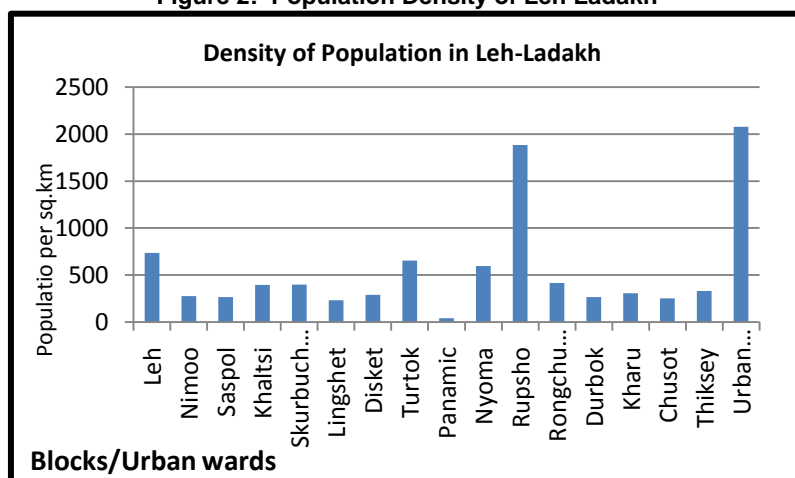
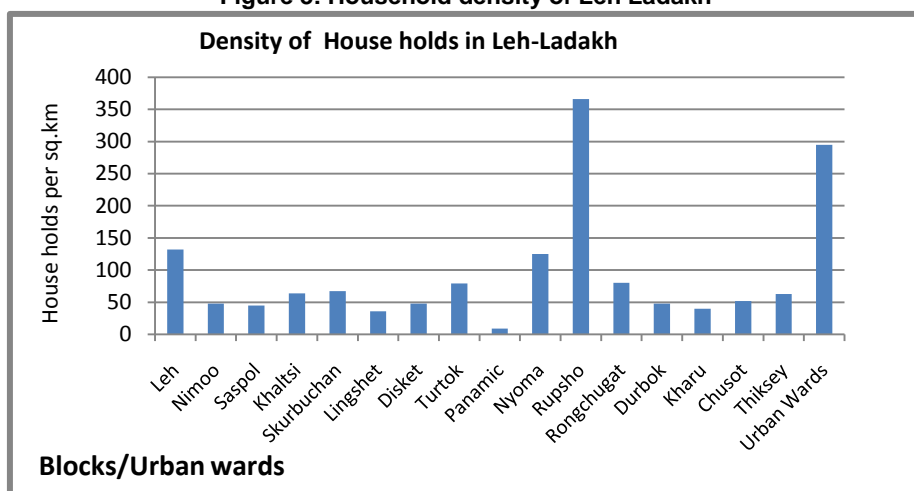


Figure 3: Household density of Leh Ladakh



Population Growth

Population growth refers to the growth of human population in a particular area during specific period of time. The growth may be positive or negative. It may be due to natural increase by low death rate, or migration. Rate of natural increase or decrease that is the rate computed on the balance of births and deaths, gives overall gain or loss of population. Analysis of the table 2 reveals that growth rate of population shows a declining trend from 1981 onwards. Highest growth rate of population was 31.96 in the decade 1971- 1981 with a decline to 13.86 in the decade 2001-2011.

1991-01	+29.97
2001-11	+13.86

Source: Statistical Digest, Leh- Ladakh
Spatial Distributions of Tribal Population

A Tribe may be defined as a group of people, often of related families, who live together, sharing the same language, culture and history, especially those who do not live in towns or cities. From the table 3 it is clear that Leh- Ladakh is inhabited by a population of 95763 scheduled tribes, comprising of 71.74 per cent of the total population. Out of this Schedule Tribe population 47484 are males and 48279 are females. The distribution pattern of scheduled tribe population at Block level reveals a diverse pattern. The highest concentration of schedule tribe population was found in Lingshit (99.92 %), followed by Rongchugat (99.69%) and Durbok (99.56%), while as lowest concentration was found in block Leh (49.91%) and Urban Wards(53.10%)(Fig 4). The figure 5 reveals that in the study area twelve blocks are dominated by females while as only four blocks are dominated by male population. Among the tribal population overall females are dominant over males in the study area.

Table 2: Decadal Growth of Population.

Decades	Growth Rate
1901-11	+12.45
1911-21	+1.31
1921-31	+4.78
1931-41	+5.33
1941-51	+8.30
1951-61	+7.66
1961-71	+18.65
1971-81	+31.96
1981-91	+31.91

Table 3: Tribal Composition of Population

Name of Block	Total Population	Schedule Tribe	% ST to T Pop	Male	% Male	Female	% Female
Leh	18401	9184	49.91	4600	50.09	4584	49.91
Nimoo	5042	4931	97.80	2457	49.83	2474	50.17
Saspol	3599	3326	92.41	1659	49.88	1667	50.12
Khaltsi	6114	5942	97.19	2911	48.99	3031	51.01
Skurbuchan	4950	4893	98.85	2402	49.09	2491	50.91
Lingshet	2430	2428	99.92	1265	52.10	1163	47.90
Disket	10404	7170	68.92	3407	47.52	3763	52.48
Turtok	6864	4928	71.79	2436	49.43	2492	50.57
Panamic	5355	4357	81.36	2089	47.95	2268	52.05
Nyoma	4043	2535	62.70	1205	47.53	1330	52.47
Rupsho	1846	1312	71.07	674	51.37	638	48.63
Rongchugat	2546	2538	99.69	1146	45.15	1392	54.85
Durbok	4721	4700	99.56	2337	49.72	2363	50.28
Kharu	12343	7724	62.58	3944	51.06	3780	48.94
Chusot	8556	8400	98.18	4065	48.39	4335	51.61
Thiksey	5403	5004	92.62	2462	49.20	2542	50.80
Urban Areas	30870	16391	53.10	8425	51.40	7966	48.60
Total	133487	95763	71.74	47484	49.58	48279	50.42

Source: Census of India, 2011

Figure 4: Distribution of ST population

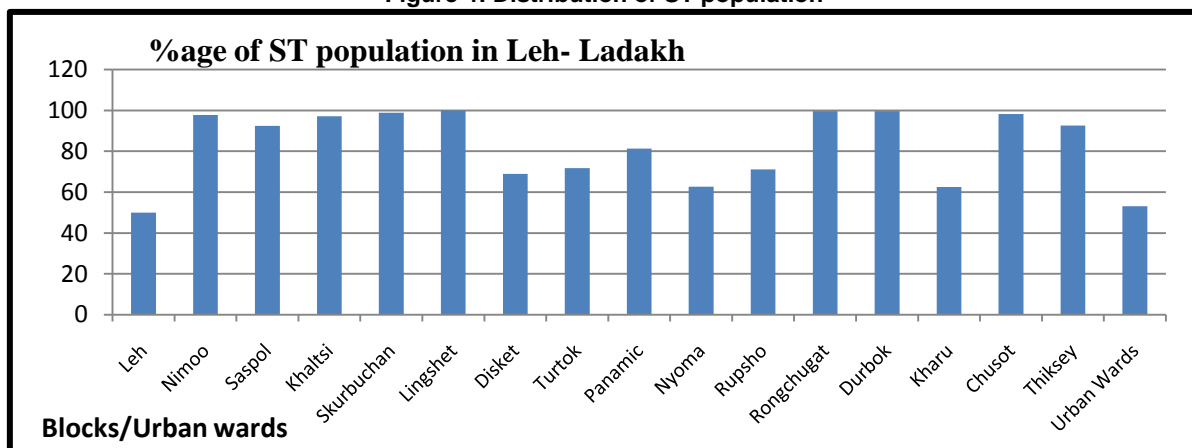
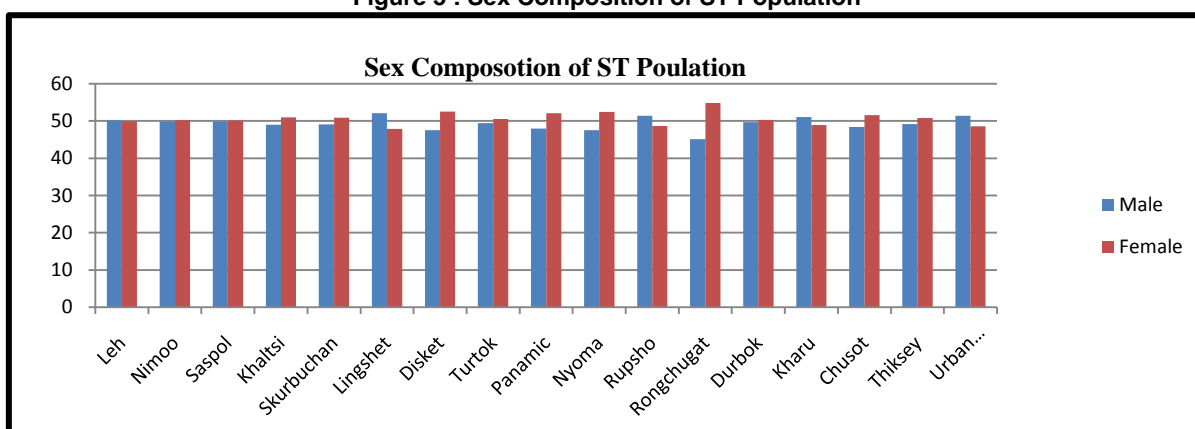


Figure 5 : Sex Composition of ST Population



Sex Composition of Population in Leh- Ladakh

Out of total population of 133487, near about 78970 are male and 54516 are females. Sex ratio varies from block to block and from rural to urban areas in Leh- Ladakh (table 4) .From the figure 6 it is clear the overall sex ratio of District Leh is 690. Some Blocks are dominated by males while as some are

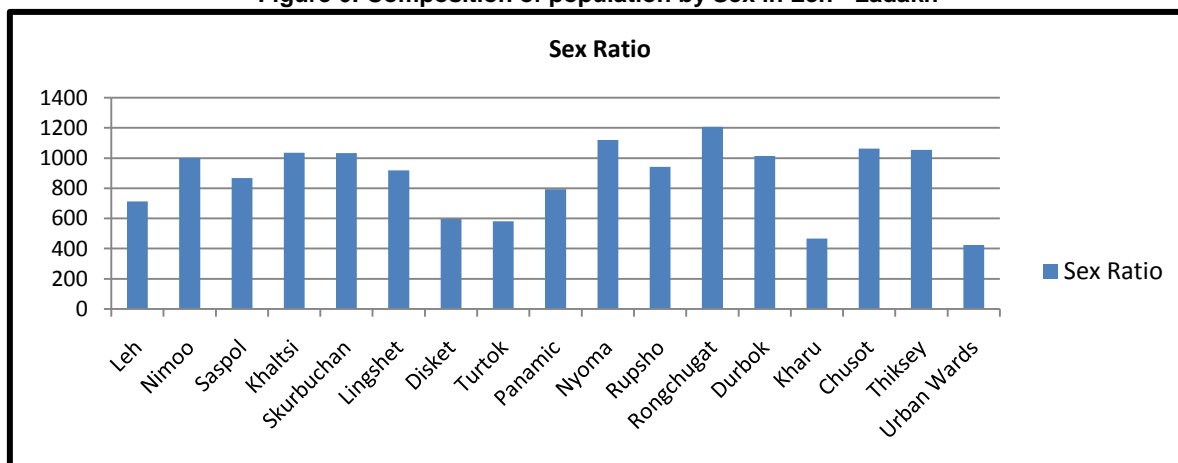
dominated by females. Overall females are quite less as compared to males The highest sex ratio was found in Block Rongchugat (1206), followed by Nyoma (1120) and Chusot (1062). Urban areas has the lowest sex ratio (425) followed by Block Kharu (466) Turtok (581) and Disket (597) (Table 4).

Table 4: Sex Composition of Population

Name of Block	Total Population	Male	% Male	Female	% Female	Sex Ratio
Leh	18401	10748	58.41	7653	41.59	712
Nimoo	5042	2518	49.94	2524	50.06	1002
Saspol	3599	1928	53.57	1671	46.43	867
Khaltsi	6114	3004	49.13	3110	50.87	1035
Skurbuchan	4950	2435	49.19	2515	50.81	1033
Lingshet	2430	1267	52.14	1163	47.86	918
Disket	10404	6513	62.60	3891	37.40	597
Turtok	6864	4342	63.26	2522	36.74	581
Panamic	5355	2985	55.74	2370	44.26	794
Nyoma	4043	1907	47.17	2136	52.83	1120
Rupsho	1846	951	51.52	895	48.48	941
Rongchugat	2546	1154	45.33	1392	54.67	1206
Durbok	4721	2344	49.65	2377	50.35	1014
Kharu	12343	8419	68.21	3924	31.79	466
Chusot	8556	4150	48.50	4406	51.50	1062
Thiksey	5403	2631	48.70	2772	51.30	1054
Urban Areas	30870	21669	70.20	9201	29.80	425
Total	133487	78970	59.16	54516	40.84	690

Source: Compiled from Census of India, 2011 and Statistical Digest Handbook, District Leh.

Figure 6: Composition of population by Sex in Leh - Ladakh



Age structure of Population in Leh -Ladakh

A sample of 412 households were selected for the present study. Of the total sample households about 22.64 per cent of the total were falling in the age group of 0 -14 years, 26.71 per cent of the total

were falling in the age group of 14- 59 years and 50.64 per cent were falling in the age group of 60 and above years (table 5).

Table 5: Age Structure of Sample Households in Leh Ladakh

Block	Sample Villages.	Administrative Unit Sub District	No. of Households surveyed	Age Group 0-14	Age Group 14 - 59	Age Group 60 and Above
Leh	Saboo	Leh	26	20.37	25.93	53.70
Nimu	Nimu	Leh	20	20.00	26.00	54.00
Saspool	Alchi	Khaltsi	15	22.73	25.76	51.52
Khalsi	Khaltsi	Khaltsi	16	20.83	23.61	55.56
Skurbuchan	Dha	Khaltsi	11	25.00	29.76	45.24
Lingshit	Lingshit	Khaltsi	12	20.75	30.19	49.06
Disket	Hundur and Skanpuk	Nubra	36	25.81	29.03	45.16
Turtok	Taksi	Nubra	12	27.59	18.97	53.45
Panamic	Sumoor	Nubra	17	28.33	28.33	43.33
Nyoma	Kuyul	Leh	12	22.58	19.35	58.06
Rupshu	Karzok	Leh	26	23.08	26.92	50.00
Chumathang	Keray	Leh	10	20.59	29.41	50.00
Durbuk	Tagsete	Leh	13	16.67	21.67	61.67
Kharu	Gia and Shang	Leh	21	25.00	38.54	36.46
Chachut	Gogma	Leh	37	22.93	27.29	49.78
Thicksey	Shey	Leh	28	20.00	26.67	53.33
Urban Areas	Wards and Chuglamsar	Leh	100	21.00	38.54	41.46
Total	18		412	22.64	26.71	50.64

Source : Field survey September 2018

Literacy Rate and Levels of Education

Literacy rate is the number of persons for each hundred population expressed in per cent, who can read, write and understand. Literacy rate is an important socio-economic indicator for determining the development of region. The total literate population of the District Leh is 70.24 percent as per 2011 census. Table 6 shows that there exists great variation in percentage of literate population from Block to Block ranging from 43.55 in Rupsho and 74.32 in Kharu. The percentage of male literacy is higher than female rate in all Blocks. Among the 16

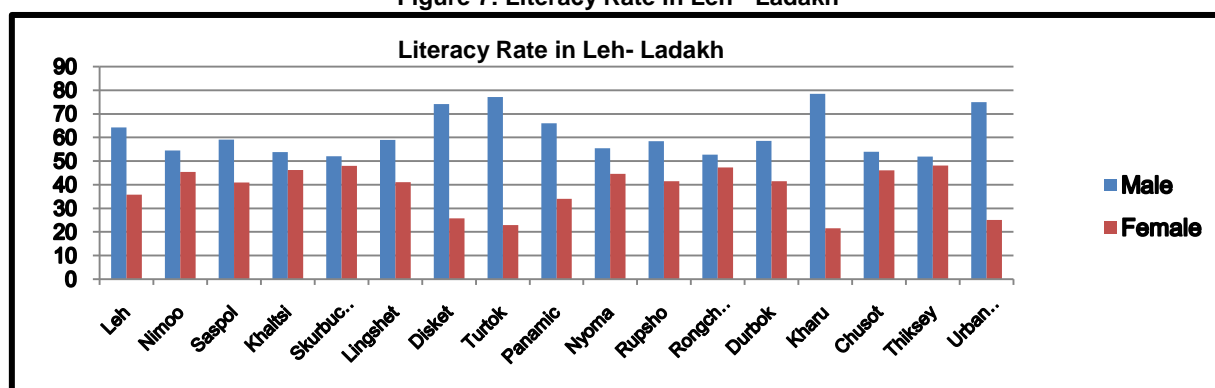
Blocks, 6 blocks records higher literacy rate than the district average.

Analysis of table 6 reveals that out of 412 households surveyed, majority of the head of households comprising of about 51.44 per cent of the total were literate while as 48.56 are illiterate. Male Literacy is 66.98 while as female literacy rate is 33.02. Literacy rate varies from block to block. From table 7, it is clear that 23.63 percent were having primary level of education, 17.59 percent were having middle level of education and 10.22 percent were having high school and college level of education. Levels of education shows variation by different blocks.

Table 6: Literacy Rate in Leh - Ladakh

Name of Block	Total Population	Total Literate	% Literate	Male Literate	% Male	Female Literate	% Female
Leh	18401	13175	71.60	8457	64.19	4718	35.81
Nimoo	5042	3178	63.03	1733	54.53	1445	45.47
Saspol	3599	2393	66.49	1413	59.05	980	40.95
Khaltsi	6114	3990	65.26	2147	53.81	1843	46.19
Skurbuchan	4950	2582	52.16	1343	52.01	1239	47.99
Lingshet	2430	1467	60.37	865	58.96	602	41.04
Disket	10404	6951	66.81	5157	74.19	1794	25.81
Turtok	6864	4446	64.77	3428	77.10	1018	22.90
Panamic	5355	3196	59.68	2110	66.02	1086	33.98
Nyoma	4043	2065	51.08	1144	55.40	921	44.60
Rupsho	1846	804	43.55	470	58.46	334	41.54
Rongchugat	2546	1649	64.77	870	52.76	779	47.24
Durbok	4721	2859	60.56	1675	58.59	1184	41.41
Kharu	12343	9173	74.32	7198	78.47	1975	21.53
Chusot	8556	5906	69.03	3182	53.88	2724	46.12
Thiksey	5403	3688	68.26	1915	51.93	1773	48.07
Urban Areas	78970	26341	33.36	19751	74.98	6590	25.02
Total	133487	93763	70.24	62808	66.98	30955	33.02

Source: Census of India, 2011

Figure 7: Literacy Rate in Leh - Ladakh

Table 7: Level of Education of Sample Households in Leh Ladakh

Block	Sample Villages.	Administrative Unit Sub District	No. of Households surveyed	Illiterate	Primary School level of education	Middle School level of education	High School and college level education
Leh	Saboo	Leh	26	46.67	30.42	12.50	10.42
Nimu	Nimu	Leh	20	37.50	28.13	21.88	12.50
Saspool	Alchi	Khalsi	15	40.00	28.57	22.86	8.57
Khalsi	Khalsi	Khalsi	16	58.33	19.44	13.89	8.33
Skurbuchan	Dha	Khalsi	11	45.95	27.03	16.22	10.81
Lingshit	Lingshit	Khalsi	12	52.38	23.81	14.29	9.52
Diskit	Hundr and Skanpuk	Nubra	36	58.06	25.81	6.45	9.68
Turtok	Taksi	Nubra	12	41.67	29.17	16.67	12.50
Panamic	Samoor	Nubra	17	59.26	14.81	11.11	14.81
Nyoma	Kuyul	Leh	12	53.85	15.38	26.92	3.85
Rupshu	Karzok	Leh	26	44.62	12.31	24.62	18.46
Chumathang	Karey	Leh	10	52.73	20.59	16.60	10.08
Durbok	Tagsete	Leh	13	48.15	29.63	14.81	7.41
Kharu	Gia and Shang	Leh	21	48.00	24.00	16.00	12.00
Chachut	Gogma	Leh	37	42.42	21.21	27.27	9.09
Thicksey	Shey	Leh	28	47.22	27.78	19.44	5.56
Urban Areas	Wards and Chuglumsar	Leh	100	27.13	21.88	13.50	20
Total	18		412	48.56	23.63	17.59	10.22

Source: Field survey September 2018.

Periodic Research

Birth and Death Rate

There is nearly five times increase in the birth rate from 1995 to 2013. Highest birth rate was recorded in 2013 and least in 1995 comprising 1744

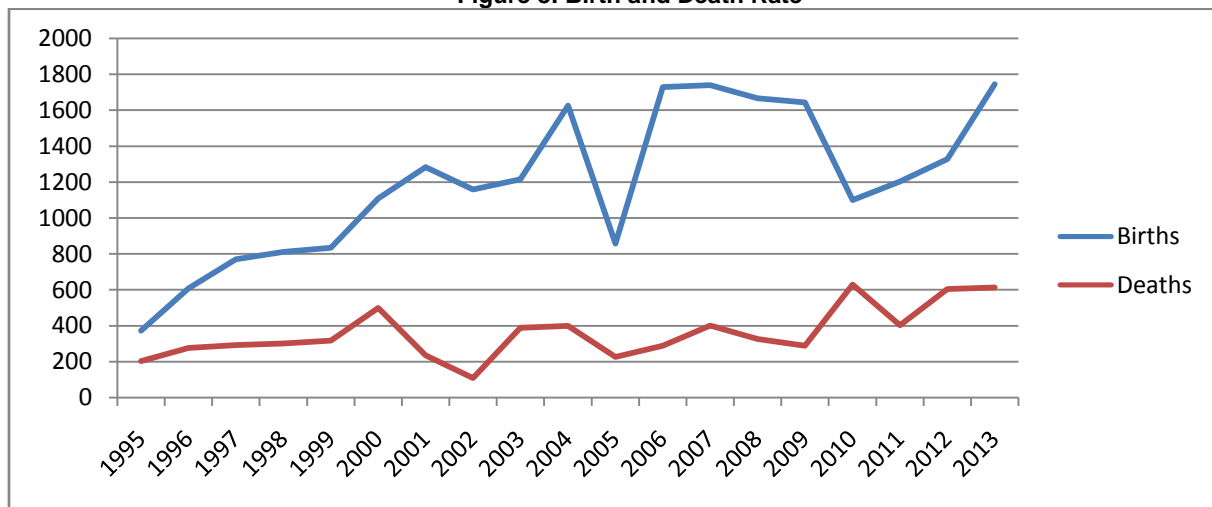
and 372 babies respectively. There is a fluctuation in the death rates in the study area as shown in figure 8. Highest deaths were recorded in 2010 and least in 2002 (table 8).

Table 8: Birth and Death Rate

Years	Births	Deaths
1995	372	203
1996	608	275
1997	769	292
1998	811	300
1999	834	316
2000	1108	498
2001	1283	235
2002	1157	108
2003	1215	388
2004	1625	399
2005	856	226
2006	1728	288
2007	1738	400
2008	1666	326
2009	1642	288
2010	1099	629
2011	1202	402
2012	1327	604
2013	1744	613

Source: Statistical Digest Handbook, District Leh

Figure 8: Birth and Death Rate



Occupational Structure in Leh – Ladakh

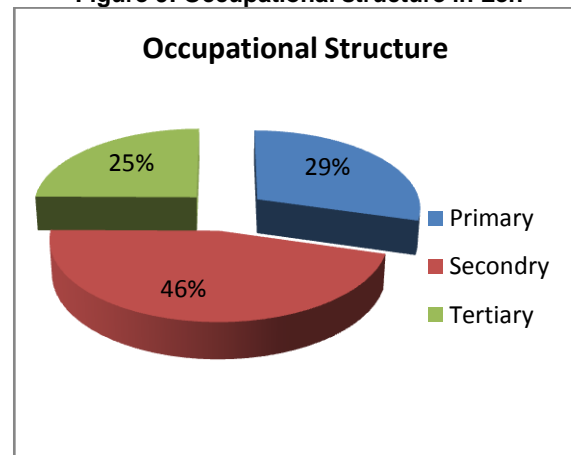
The distribution of the population according to the different types of occupation is referred to as the occupational structure. Occupations are generally classified as primary, secondary and tertiary as given in table 6. In the study area highest population is engaged in secondary activities (45.72), followed by Primary and Tertiary activities respectively (table 9).

Table 9: Occupational Structure of Population

Occupation	Percentage
Primary	29.43
Secondary	45.72
Tertiary	24.85
Total	100

Source: Field work, 2018

Figure 9: Occupational structure in Leh



E: ISSN No. 2349-9435

Rural Urban Composition of Population in Leh – Ladakh

District Leh has a total population of 133487. Out of these 87816 persons live in rural areas which comprises of 65.79 percent, while as 45671 persons comprising of 34.21 percent inhabit the urban areas of the district. Out of the total male population of 78971, 61.30 percent inhabit rural areas while as 38.70 per cent live in urban areas. Out of the total female population of 54516 near about 73 percent inhabit rural areas while as 27 per cent live in urban areas. The total number of households in the district is 21909, among these, 14905 households (68.03%) are rural while as 7004 households (31.97 %) are urban.

Table 10 : Rural Urban Composition of Population.

	Population	Males	Females	Households
Rural	87816 (65.79%)	48411 (61.30%)	39405 (72.28%)	14905 (68.03%)
Urban	45671 (34.21%)	30560 (38.70%)	15111 (27.72%)	7004 (31.97%)
Total	133487	78971	54516	21909

Conclusion

There is uneven distribution of population in Leh District. Some blocks are most populated where as some are sparsely populated. Among the 16 Blocks, 6 blocks records higher literacy rate than the district average literacy of 65.82 percent as per 2011 census. The scheduled tribe population is 77.49 per cent of the total population. The distribution pattern of scheduled tribe population at Block level reveals a diverse pattern. In the study area twelve blocks are dominated by females while as only four blocks are dominated by male population. Overall females are dominated over males in the study area among tribal population. There is nearly five times increase in the birth rate from 1995 to 2013.

Acknowledgement

Authors are highly thankful to funding Agency Indian Council of Social Science Research (ICSSR) for financial support of major project "Assessment of quality of Native Ethnic tribes of cold desert Leh-Ladakh". Present research paper is a part of this project.

References

Austin, C. M.; Honey, R. and Thomas C. E. (1987), *Human Geography*, West Publishing Company, New York, pp. 129.

Periodic Research

Bogue, D.J.(1969) , *Principles of Demography*, New York, p 164

Chaddock, R.E. (1956), *Age and sex in population Analysis*, In J.J. Spengler and others (Eds.), *Demographic Analysis: Selected Readings*, p 443.

Christopher, W. (1985), *The Dictionary of Demography*, Blackwell reference, pp. 54.

Clarke, J.I. (1965), *Population Geography*, Pergamum Press Oxford, London, p 62.

Howley, A.H.(1959), *Population Composition*, In, P.M. Hauser and O. D. Duncan (eds), *The study of population*, Chicago,p361.

Jain, R. K. (2014), *A Text Book of Population Studies*, Astha Publishers and Distributors, New Delhi, pp. 52.

Lee, E.S. (1970), *A Theory of Migration*, In G.J. Demko and others (eds.), *Population Geography*, Tata McGraw Hill, New York, pp 115-120.

NewBold, R.K. (2012), *Population Geography – Tools and Issues*, Rawat Publications New Delhi, pp. 1.

Preston, S. H ; Patrick, H. and Michel, G, (2003), *Demography – Measuring and Modeling Population Processes*, Blackwell Publishers, pp.1-3.

Raven steins, E.(1989), *The laws of Migration Journal*, Royal Statistical Society, 49, pp 241-305.

Sharma, R K. (2004), *Demography and Population Problems*, Atlantic Publishers and Distributors, New Delhi, pp. 9.

Shrivastava, A.K. (2012), *Population Development, Environment and Health*, APH Publishing Corporation, New Delhi, pp. 33,34.

Sidduqui, F. A (1984), *Regional Analysis of Population Structure*. Concept Publishing Co. New Delhi, pp 1-50.

Trewartha G.T. (1953), *A Study of Population Geography*, *Annals of the Association of American Geographers*, Vol. 43, p.71.

Trewartha G.T.(1969), *A Geography of Population World Pattern*. John Willey, New York. pp 1-55.

Zelinsky, W. (1966), *A Prologue to Population Geography*, New Jersey, p.6.