

4.1 Introduction

Man is the pivotal point from which all other elements are observed and derive their meaning and significance. While defining population geography, Trewartha stressed that *it was concerned with understanding the regional differences in the earth's covering the people* (Trewartha, 1969). Since, population plays a key role in the formulation of strategies and developmental processes of the country therefore, for the effective developmental planning, relevant data on population structure and composition is very significant. The study of demography not only deals with the size and distribution of population but also it determines the rate of social and economic changes in the society and helps to reduce the regional imbalances in socio-economic aspects.

Demographic characteristics are the important components of the society because it deals with the population figures and emphasizes the spatio-temporal variation of an area in terms of population. *Demography does not deal with the behavior of individuals but only the aggregates of people or even part thereof. The numerical portrayal of human population is known as demography* (Barckley, 1958). Fundamentally, it is viewed that demography is the study of size, nature and composition and distribution of population in a broader aspect. However the scope of demography has been grouped into micro demography and macro demography. *Micro demography is the study of the growth, distribution and redistribution of the population within community, state, economic area or other local area* (Bogue, 1969). Whereas, macro demography deals with the birth rate of population, death rate of population, the causes of slow and rapid birth rate and death rate, population growth, sex ratio, occupational structure, health condition, education and the social and economic conditions of the people.

The necessity of demographic analysis is very important because with the help of population data the planners would be able to frame proper developmental strategies of a region with a view to reduce the regional disparities in socio-economic and infrastructural sectors. The study of demographic characteristics consist of the various aspects of population studies and the present chapter deals with the distribution, growth, density of population, sex ratio, occupational structure, population composition by religion, ethnic structure, age-sex structure and dependency ratio of Jalpaiguri district.

4.2 Population Distribution

Population growth and their distribution are the two major issues in population studies. The change in the size and distribution of population over an area in a definite course of time has a significant impact upon the socio-economic as well as on the environment of an area. *By population distribution we mean the geographical and spatial study of distribution of population of a territory and the way in which the people are distributed over it* (Hans Raj, 2006). Thus, the distribution of population of an area is determined on the basis of the spatial pattern of location of a population. The analysis of population distribution deals with the way in which the population is distributed over an area which either may be sparse, dense or agglomerated. Table 4.1 reveals the block-wise distribution of rural population of Jalpaiguri district from 1951-2011.

Table 4.1: Distribution of Rural Population in Jalpaiguri district (1951-2011)

Rural Population							
C.D. Blocks	1951	1961	1971	1981	1991	2001	2011
Rajganj	51723	80766	128744	120688	166888	283967	190645
Jalpaiguri	74200	123084	162251	205182	261379	280927	261784
Maynaguri	88315	103264	144716	169602	203872	254594	291073
Dhupguri	110910	157671	98597	122145	307259	357134	380090
Mal	88158	126032	155191	183766	220093	265392	275384
Matiali	49188	57697	61045	74649	93253	105906	102418
Nagrakata	42389	58635	53694	70148	101782	115907	127397

Source- Census of India, 1951-2011

There exists a spatial variation in the distribution of rural population at the block level in Jalpaiguri district from the post-independence period to 2011. However from 1951 to 2011 Census, the trend shows that, the distribution of population is high in the eastern and particularly in the south eastern part of the district consisting of Dhupguri and Maynaguri blocks while the northern part of the district consisting of Matiali and Nagrakata blocks is sparsely inhabited. However, the distribution of rural population varies in terms of regional resources and the social structure of an area. With the increase of socio-cultural provisions along with the infrastructural facilities the size of population of a particular area tends to increase.

In 2011, the population distribution reflects varying patterns of unevenness (Fig. 4.1). The maximum concentration of population has been observed in Dhupguri, Jalpaiguri and Maynaguri blocks of the district owing to its level surface and fertile soils. Whereas the

northern part of the district covering Matiali and Nagrakata blocks have sparse population distribution due to its undulating topography.

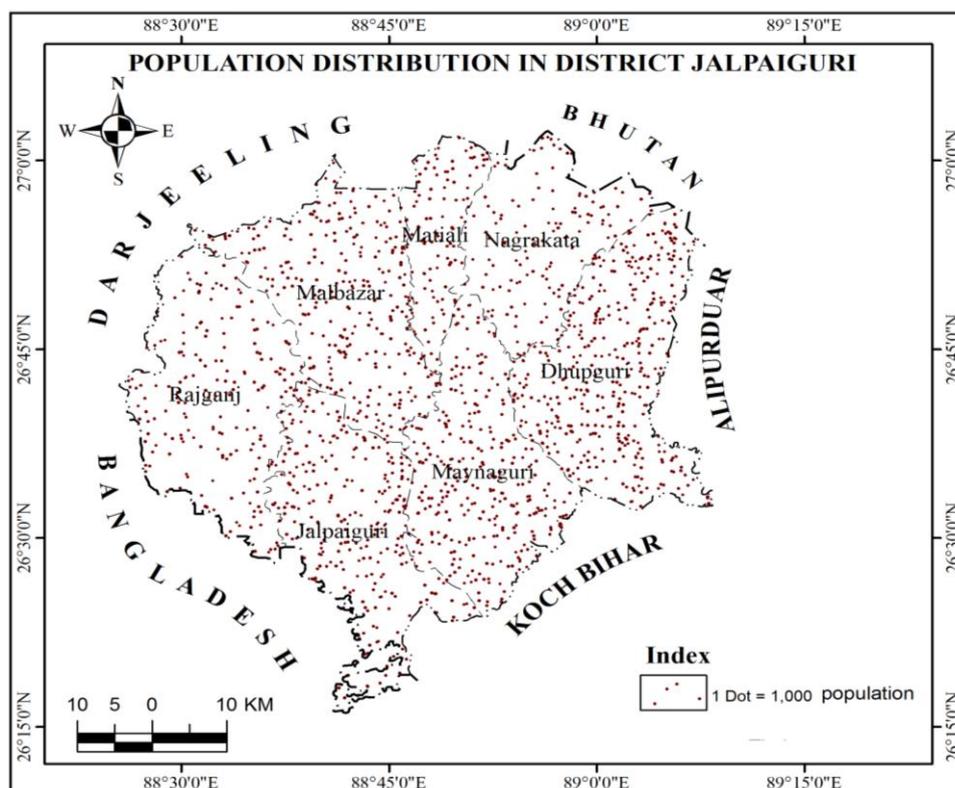


Fig. 4.1: Population Distribution of Jalpaiguri district, 2011

Source- Census of India, 1951-2011

4.3 Population Growth

The concept of population change or growth of population is often used to connote the change in the number of inhabitants of a territory during a specific period of time, irrespective of the fact whether the change is negative or positive (Chandna, 2001). The growth of population is the outcome of the three basic demographic factors, i.e. fertility, mortality and migration.

Table 4.2: Growth Rate of Rural Population of Jalpaiguri district

Growth rate of Rural Population and Decadal Variation						
C.D. Blocks	1951-61 (%)	1961-71 (%)	1971-81 (%)	1981-91 (%)	1991-2001 (%)	2001-2011 (%)
Rajganj	56.15	59.40	-6.25	38.28	70.15	-32.86
Jalpaiguri	65.88	31.82	26.45	27.38	7.47	-6.81
Maynaguri	16.93	40.14	17.19	20.20	24.87	14.32
Dhupguri	42.16	-37.47	23.88	151.5	16.23	6.42
Mal	42.96	23.14	18.41	19.76	20.58	3.76
Matiali	17.30	5.80	22.28	24.92	13.56	-3.29
Nagrakata	38.33	-8.43	30.64	45.09	13.87	9.91

Source- Computed by researcher from Census of India, 1951- 2011

Since the growth of population is associated with the change in the size of population therefore the geographical study of population growth is essential for understanding the population dynamics of Jalpaiguri district over a period of time. The trend of population growth in block level of Jalpaiguri district has been examined here in the perspective of the last six decades from 1951-2011. The percentage of population varies widely from place to place at any given time.

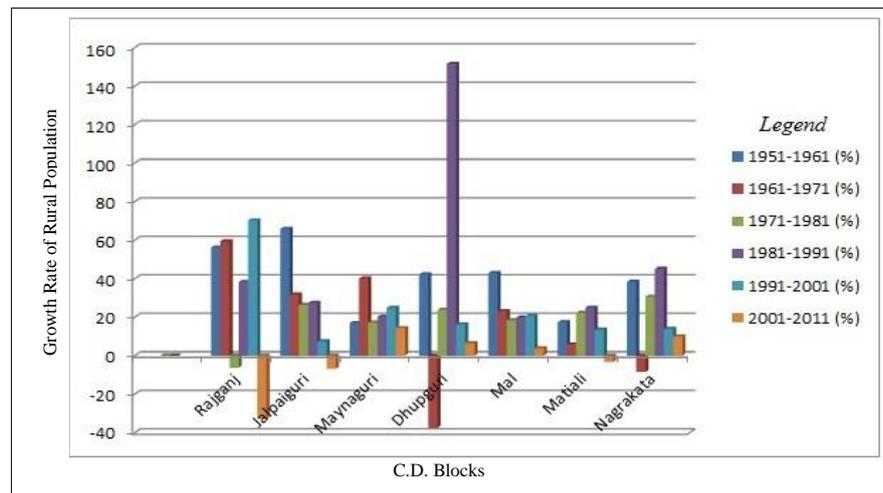


Fig. 4.2: Growth Rate of Rural Population of Jalpaiguri District

Source- Computed by researcher from Census of India, 1951- 2011

A study of the rural population of Jalpaiguri district reveals that it has experienced a positive growth rate of population from 1951-2001 (Fig 4.2). From Table 4.2 it is evident that the growth rate of rural population of the district has increased steadily from 1951-1961. *In Jalpaiguri district population growth is very much dependent on its increasing prosperity due to the growth of tea industries in this region* (District Census Handbook, Jalpaiguri, 1961). The growth rate of rural population of the district has been more rapid during 1981-91 and in 1991-2001. Such a remarkable increase in the growth rate of rural population is attributed to immigration of labourers in the growing tea industries, fertile land, improved agricultural facilities, better transport and commercial facilities, expansion of food supply and the extension of health care facilities played a significant role in this field.

Though a successive increase in the growth rate of rural population has been observed during the post-independence period but the growth of rural population in Jalpaiguri district has surpassed the negative impact during 2001-11 in Rajganj, Jalpaiguri and Matiali blocks of the district. The reason behind this decline is the emigration of youths in search of better prospects and better economic life. However another reason and explanation for the negative growth rate of rural population is the growth of census towns and a decline in the number of inhabited villages which has been observed in the district.

According to the District Statistical Handbook 2001 and 2011, there were 404 inhabited villages during 2001 whereas it has declined to 391 inhabited villages during 2011. The rural population growth of Rajganj block fell down immensely in 2001–2011 with - 32.86% and this is attributed to the fact that there were 29 inhabited villages during Census 2001, which has declined into 26 inhabited villages during Census 2011. Moreover, Dabgram, Binnaguri and Chakiabhita have become census towns in the present decade. Hence, a steady fall in the growth rate of rural population has been observed in the district.

4.4 Population Density

Fundamentally, the higher the population concentration in a region the greater is the pressure of population upon the available basic amenities and the natural resources of the region. The density of population refers to the number of persons per square kilometer. Population density is related to population size and the land area and the measures of population density helps in assessing the distribution of population and the pressure of population upon the available resources of an area. Therefore, the density of population is considered to be proportional and it is highly significant in assessing the demographic characteristics of an area.

Table 4.3: Area (km²) and total population of Jalpaiguri district

C.D. Blocks	1951		1961		1971	
	Area (km ²)	Total population	Area (km ²)	Total population	Area (km ²)	Total population
Rajganj	636.6	51723	636.6	80766	636.6	128744
Jalpaiguri	492.9	74200	492.9	123084	492.9	162251
Maynaguri	620.4	88315	620.4	103264	615.4	144716
Dhupguri	547	110910	547	157671	546.9	98597
Mal	541	88158	541	126032	541	155191
Matiali	206.2	49188	206.2	57697	206.2	61045
Nagrakata	276.4	42389	276.4	58635	276.4	53694

1981		1991		2001		2011	
Area (km ²)	Total population						
590.7	120688	589.9	166888	614.82	283967	614.82	190645
492.9	205182	503.06	261379	500.65	280927	500.65	261784
494.2	169602	612.47	203872	530.6	254594	530.6	291073
264.9	122145	544.1	307259	565.1	357134	565.1	380090
531.8	183766	536.72	220093	545.9	265392	545.9	275384
206.2	74649	206.2	93253	204.9	105906	204.9	102418
284	70148	397	101782	397.48	115907	397.48	127397

Source- Census of India, 1951-2011

In demographic study, population density is one of the crucial aspects which determine the level of population concentration and the spread of population in a spatio-temporal perspective. The density of population is largely affected by the physical factors

such as climate, landforms, soils, energy resources and minerals, accessibility, socio-cultural factors, economic factors and the demographic factors of an area.

G. T. Trewartha had suggested three types of density calculations, i.e. arithmetic density, nutritional density and agricultural density. The ratio between the total population and the total land area which is expressed in terms of persons per unit area is designated as arithmetic density. It is calculated as:

$$\text{Arithmetic density} = \frac{\text{Total population}}{\text{Total land area}}$$

An effort has been made here to explain the spatial-temporal variation of arithmetic density in the rural areas of Jalpaiguri district since it is the simplest ratio between the total population and the total land area. The density of population increases proportionately when the population of a region increases over a period of time and the area of the region remains constant. Table 4.3 depicts the area in km² and total population of Jalpaiguri district for the successive years i.e. from 1951 to 2011. The average density of rural population per km² for Jalpaiguri district according to census 2011 is 483 persons.

Table 4.4: Density of Rural Population per km² in Jalpaiguri district (1951-2011)

Rural Population							
C.D. Blocks	1951	1961	1971	1981	1991	2001	2011
Rajganj	81	126	202	204	282	462	310
Jalpaiguri	150	249	329	416	519	561	523
Maynaguri	142	166	235	343	332	479	549
Dhupguri	202	288	180	461	564	631	672
Mal	163	232	286	345	410	486	504
Matiali	238	279	296	362	452	517	500
Nagrakata	153	212	194	247	256	292	320

Source- Computed from Census of India, 1951-2011

However as per the average density of India with 216 persons per km² in 1981, R.C. Chandna had categorized the classes for population density for the Census data 1981 which are as follows.

- i.) Areas of high density with more than 350 persons per km²
- ii.) Areas of moderate density with 150 to 350 persons per km²
- iii.) Areas of low density with less than 150 persons per km²

Table 4.4 depicts that the density of rural population varies widely from place to place at any given time. Following the above categories, it has been observed that the blocks of Jalpaiguri district falls under areas of moderate and low density during the decade 1951, 1961 and 1971. During 1981 above 350 persons per km² has been observed in Jalpaiguri, Dhupguri and Matiali blocks of the district with high density of rural population.

Further, in Census, 1991 high density of rural population with above 500 persons per km² has been observed in Jalpaiguri and Dhupguri blocks whereas Rajganj, Maynaguri, Mal, Matiali and Nagrakata blocks constitutes the moderate density of population. Due to a high population growth during 1981-91 and in-migration of people from the neighbouring districts the decade experienced a high and a moderate density of population. In 2001 except in Nagrakata block the remaining six blocks experienced high population density with more than 400 persons per km².

During 2011, the trend shows almost similar to that of 2001 having a high and a moderate population density in rural Jalpaiguri district. Thus, it is clear from the above fact that the population in the study area is increasing with time. Moreover, the raise in population also reflects the fact that the study area has undergone socio-economic changes in the recent decades along with the improvement of socio cultural provisions, infrastructural facilities, improvement in health status, increase in agricultural production, irrigational facilities and the presence of tea gardens which attracts a large number of labourers. In addition to these, the comprehensive rural development schemes for poverty alleviation also affect the growth of rural population in the study area.

Table 4.5: Difference in Density of Rural Population in Jalpaiguri District (1951-2011)

C.D. Blocks	1951-61	1961-71	1971-81	1981-91	1991-01	2001-11
Rajganj	45	76	2	78	180	-152
Jalpaiguri	99	80	87	103	42	-38
Maynaguri	24	69	108	-11	147	70
Dhupguri	86	-108	281	103	67	41
Mal	69	54	59	65	76	18
Matiali	41	17	66	90	65	17
Nagrakata	59	-18	53	9	36	28

Source- Computed by researcher from Census of India, 1951-2011

However, the changes in density of rural population have been studied by comparing the density pattern of the present decade with the past decadal years (Fig. 4.3). Table 4.5 reveals the decadal variation in rural population density during the successive Census years from the post-independence period to 2011. A continuous increase in the population density have been observed in Jalpaiguri district in every decade except during 1961-1971 in Dhupguri block and Nagrakata block and during 1981-1991 in Maynaguri block which experienced a negative population growth. In Census 2011, a decrease in the density of rural population has been observed in comparison to Census 2001 in Rajganj and Jalpaiguri blocks of the district, due to the growth of census towns.

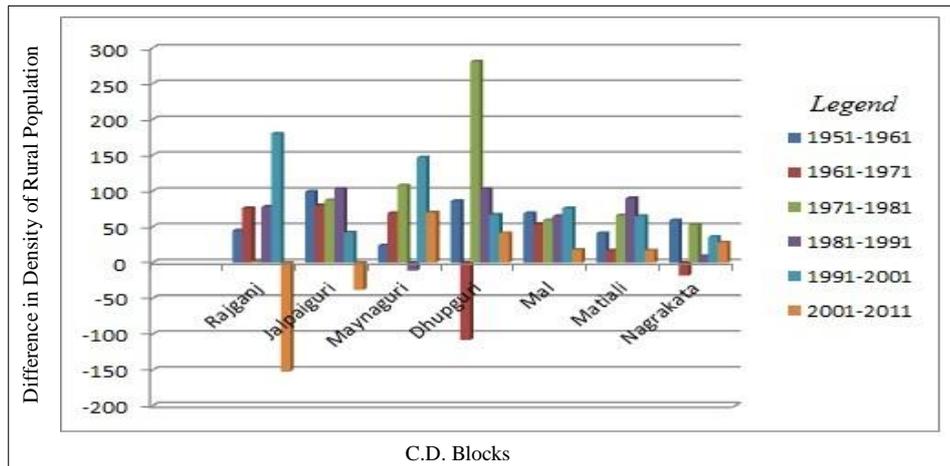


Fig. 4.3: Difference in Density of Rural Population in Jalpaiguri District (1951-2011)

Source- Computed by researcher from Census of India, 1951-2011

However, the maximum increase has been observed since 1971, owing to the growth of tea industries which attracted a large number of labourers. Further the rise in population was attributed to the influx of population from Bangladesh during 1971-81. *In the seventies, India experienced the highest decadal population growth and West Bengal grew fast because of large scale immigration from Bangladesh* (Majumdar, 2013).

Table 4.6: Density of Population, 2011

Density of population per km ²	Category	Blocks
150-350	Moderate	Rajganj, Nagrakata
>350	High	Jalpaiguri, Maynaguri, Mal, Matiali and Dhupguri

Source- Computed from Census of India, 2011

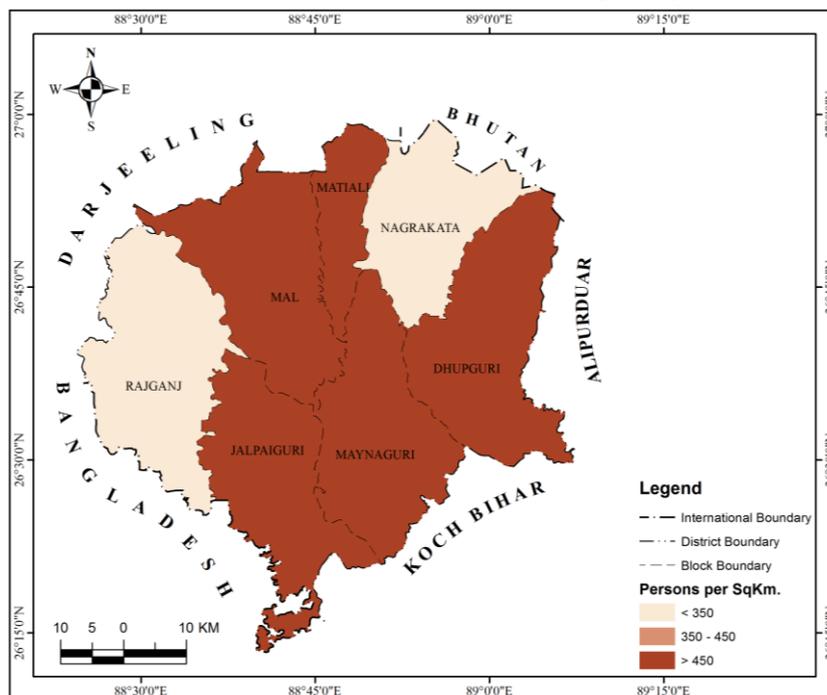


Fig. 4.4: Density of Population of Jalpaiguri district, 2011

Source- Computed from Census of India, 2011

Following the classification of population density by R.C. Chandna, two distinct categories of population density regions has been identified in Jalpaiguri district, 2011. Table 4.6 depicts the density of population for 2011. The area having population density, 150-350 persons per km² shows a moderate population density in Rajganj and Nagrakata blocks of Jalpaiguri district whereas Jalpaiguri, Maynaguri, Mal, Matiali and Dhupguri blocks falls under the high category of population density with more than 350 persons per km² in 2011 (Fig. 4.4).

4.5 Sex Ratio

Sex ratio is the measurement of sex composition of a population in an area. In India sex ratio is measured as the number of females per 1000 males. It is expressed as:

$$P_f/P_m \times 1000$$

In order to determine the demographic characteristics, the study of sex ratio assumes greater significance because the proportion of males and females in an area is an important indicator of the population analysis. Sex ratio is an important component for the assessment of the number of males and females which is significant for the developmental planning of an area in terms of socio-economic aspects. The factors that affect the sex ratio are the sex ratio at birth, mortality rates of the males and females and the migration of population.

Franklin (1956) rightly observed that *sex ratio is an index of economy prevailing in an area and is useful tool for regional analysis as population growth, marriage; occupation structure is dependent on it*. In India, the sex ratio is 940 females per 1000 males (Census, 2011). However, the overall sex ratio of the total rural population of Jalpaiguri district is 954 i.e. 954 females per 1000 males according to Census, 2011. It has been observed that the sex ratio of the district is higher than the state average (950 females per 1000 males). Since the classification of population according to sex is a crucial part of demographic studies therefore a balanced sex ratio is always desired because it influences the socio-economic structure of a region.

The proportion of men and women in the total population has a vital bearing as it affects the marriage rates, fecundity and the occupational structure of an area. R. C. Chandna has categorized the sex ratio for 2011 Census data, which are as follows:

- i.) Above 1000 (very high sex ratio where the females outnumbered the males)
- ii.) 950-1000 (high sex ratio)
- iii.) 900-950 (moderate sex ratio)
- iv.) 850-900 (areas of low sex ratio where there is an acute paucity of females)

However, the categories of R. C. Chandna have been followed for the sex ratio of Jalpaiguri district. Table 4.7 reveals the sex ratio of rural population of Jalpaiguri district from the post-independence period to 2011. It has been observed that the trend of sex ratio in rural Jalpaiguri district marked substantial improvement in all the successive census years from 1951-2011. Considerably low sex ratio has been observed in Jalpaiguri district during Census 1951 and 1961 indicating deficiency of females due to socio-economic and demographic problems of the study area which reduces the quality of life of the rural people.

Table 4.7: Sex ratio of Rural Population of Jalpaiguri district (1951-2011)

Sex ratio for rural population of C.D. Blocks							
C.D. Blocks	1951	1961	1971	1981	1991	2001	2011
Rajganj	817	843	848	899	909	926	923
Jalpaiguri	860	862	896	913	922	934	946
Maynaguri	832	866	895	905	911	933	931
Dhupguri	813	877	894	908	936	921	969
Mal	811	847	893	896	943	961	973
Matiali	865	864	915	927	955	980	952
Nagrakata	837	854	906	910	939	971	987

Source- Computed from Census of India, 1951-2011

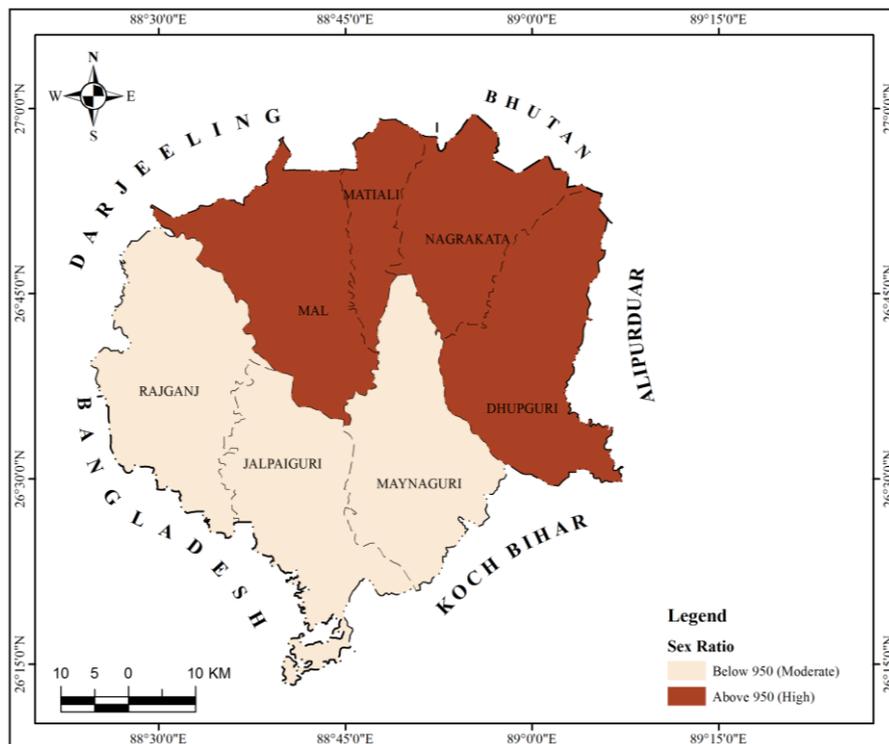


Fig. 4.5: Sex ratio of Rural Population of Jalpaiguri district, 2011

Source- Computed by researcher from Census of India, 1951-2011

However, moderate and high sex ratio has been observed from 1981-2011 Census years. The reason for the increasing trend in sex ratio in rural area is attributed to the preponderance of male migration to urban areas. According to Census 2011, high sex ratio

has been observed in Dhupguri, Mal, Matiali and Nagrakata blocks of the study area indicating a balanced distribution of sexes whereas Rajganj, Jalpaiguri and Maynaguri blocks observe a moderate sex ratio which is close to the National average. Further, it has been observed that in Census, 2011 none of the blocks have low sex ratio which is below 900 females per 1000 males (Fig. 4.5).

4.6 Literacy

Literacy is an important demographic component and it is a good measure of human resource development. Education plays a key role in influencing the quality of human resources as it helps in conveying proper ideas and thoughts over time and space. Literacy acts as a tool in achieving skills for raising the economy, socio-cultural well-being of the society and the overall development of a country.

Proportion of literate population is the prime indicator of the socio-economic development of a country and it is the socio-economic constraints which affect the expansion of literacy. Hence, for the reduction of poverty in an area literacy assumes added significance.

Table 4.8: Effective Literacy rate of Rural Population of Jalpaiguri district

Literacy rate for rural population of C.D. Blocks							
C.D. Blocks	1951	1961	1971	1981	1991	2001	2011
Rajganj	13.15	20.68	24.00	25.57	41.63	59.10	72.08
Jalpaiguri	12.70	20.94	28.00	30.34	48.23	65.30	73.81
Maynaguri	17.49	19.28	22.00	19.24	45.53	64.20	75.63
Dhupguri	11.06	13.93	17.00	24.00	37.33	59.50	69.57
Mal	10.32	14.47	16.00	18.42	31.38	53.50	66.31
Matiali	9.67	14.37	17.00	22.28	32.94	54.40	66.98
Nagrakata	9.55	14.72	14.00	17.88	29.45	48.50	61.27

Source- Computed from Census of India, 1951-2011

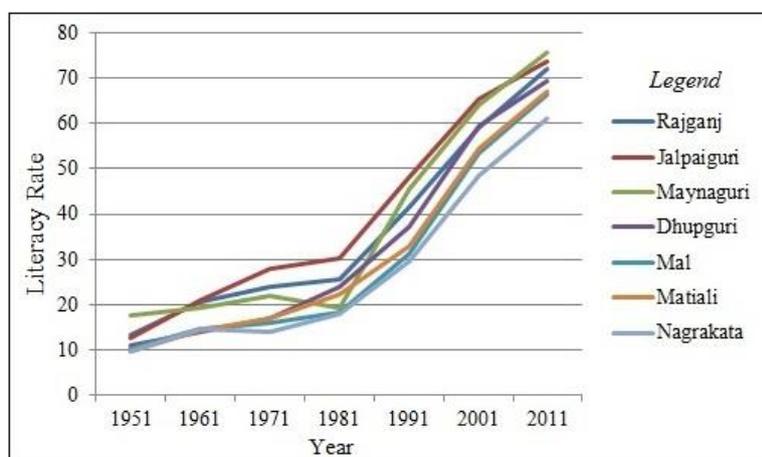


Fig. 4.6: Effective Literacy rate of Rural Population of Jalpaiguri district

Source- Computed by researcher from Census of India, 1951-2011

According to Census of India, from 1991 onwards, literacy rate denotes the percentage of population, with age above seven years, who is able to read and write and have the ability to understand any language and therefore, all children below the age of six years are treated as illiterate. However, Jalpaiguri district provides varying degrees of the concentration of literate population. According to Census 2011, India has recorded 74.04% literacy rate where the male literacy rate is 82.14% and female literacy rate is 65.46%. However, the literacy rate for rural Jalpaiguri district is below the national average with 60.62% where the male literacy rate is 67.42% and the female literacy rate is 53.50%. It is evident from Table 4.8 that there has been substantial improvement in literacy rate in rural areas of Jalpaiguri district from 1951 to 2011.

The literacy rate of Jalpaiguri block is 12.70% in 1951 which has increased to 73.81% in 2011 (Fig. 4.6). Improvement in formal and informal educational institutions, adequate infrastructural facilities influence the raise in the literacy rate of the rural areas of the district. In 2011, Maynaguri block recorded the highest share of male and female literates in the study area followed by Rajganj and Jalpaiguri blocks. The reason behind the higher literacy growth rate is the increase in the number of educational institutions over the decades and also the initiatives that had been taken in the study area in order to fulfill the fundamental right for free elementary education for all children below the age of 15, along with the facility of scholarships and free mid-day meal programme in the schools of Jalpaiguri district. The least percentage of literacy rate is confined in the northern part of the study area consisting of Mal, Matiali and Nagrakata blocks because of the female literacy which is significantly low than the male counterpart in this part of the district.

4.6.1 Gender disparity Index

Though there has been a significant improvement in literacy rate of the seven blocks of Jalpaiguri district from the post-independence period to 2011, but a difference between literacy rate among the males and females has been observed in Census, 2011. To examine the male-female disparity pattern in literacy rate, an index was formulated by Sopher in (1974) and has been modified by Kundu and Rao (1985) which is the most widely used method in analyzing the gender disparity in literacy rate. The gender disparity in literacy rate of Jalpaiguri district has been computed with the help of the following method.

$$D_i = \text{Log} (X_2/X_1) + \text{Log} [(200-X_1)/(200-X_2)]$$

Where, D_i is the disparity index,

X_1 denotes female literacy rate and X_2 denotes male literacy rate.

Table 4.9: Gender disparity Index in Literacy rate of Jalpaiguri district, 2011

C.D. Blocks	Male literacy rate (%)	Female literacy rate (%)	Gender Gap (%)	Gender Disparity Index
Rajganj	79.25	65.42	13.82	0.12
Jalpaiguri	79.62	65.06	14.56	0.14
Maynaguri	80.96	66.90	14.06	0.13
Dhupguri	77.25	60.96	16.29	0.15
Mal	73.53	57.09	16.44	0.18
Matiali	75.80	54.61	21.19	0.21
Nagrakata	70.51	51.93	18.58	0.19

Source- Computed from census of India, 2011

The disparity in male-female literacy rate is prevailing in many parts of the country and Jalpaiguri district is no exception. It is evident from Table 4.9 that the male literacy rate is substantially higher in all the blocks of Jalpaiguri district as compared to its female counterpart. In spite of the implementation of the educational programmes and policies to increase the rate of female literacy, a gender gap in literacy rate still exists in the study area. It varies from 13.82% in Rajganj block to 21.19% in Matiali block of Jalpaiguri district.

Similarly, the disparity index has been calculated for all the blocks of Jalpaiguri district and the values ranges from 0.12 in Rajganj block to 0.21 in Matiali block (Fig. 4.7). The traditional outlook of the parents and the unequal access to educational facilities is the prime reason behind the lower literacy rates of the females as compared to the males in the study area. Hence, the government should take more initiatives in order to reduce the gender disparity in literacy rate with a view to strengthen the overall socio-economic condition of the study area.

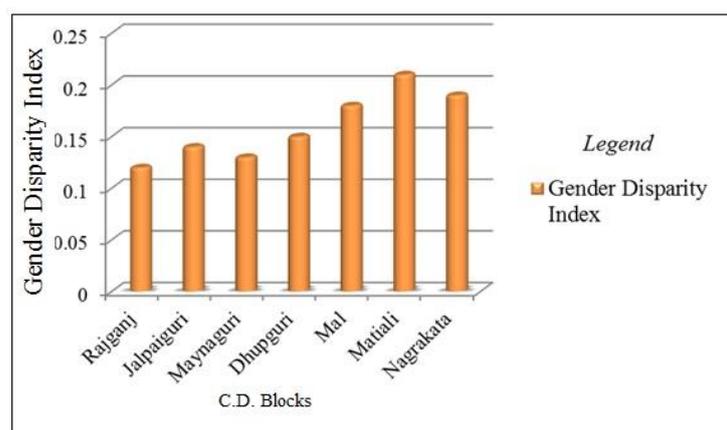


Fig. 4.7: Gender disparity Index in Literacy rate of Jalpaiguri district, 2011

Source- Computed by researcher from census of India, 2011

4.7 Demographic characteristics of the sampled villages of Jalpaiguri district

4.7.1 Population Distribution

A distribution of rural population of the sampled villages of each block of Jalpaiguri district has been depicted in the Table 4.10.

There is an existence of spatial variation of rural population distribution in the study area. The high concentration of population lies mainly in the eastern part of the study area owing to the fertile land, good irrigation provision and better transport and commercial facilities as compared to the northern part of the district consisting of Matiali and Nagrakata blocks where the percentage of rural population distribution is low.

Table 4.10: Distribution of Rural Population of the sampled villages of Jalpaiguri district, 2001, 2011

Sampled villages	Male		Female	
	2001	2011	2001	2011
RAJGANJ				
Araji Bhelakoba I	297	186	253	167
Gadheganj	1956	1886	1795	1753
Badlagachha	801	960	772	924
JALPAIGURI				
Araji Amarkhana	130	130	111	132
Maria Kamala Pukhari	239	254	183	257
Shakati	1672	1761	1557	1736
MAYNAGURI				
Purbba Dobbari	0	57	0	58
Kajaldighi	711	786	668	728
Gopalganj	0	257	0	265
Sisuabari	531	358	511	366
Chapgar	1413	1454	1323	1350
Purbba Baragharia	698	1415	671	1380
Purba Sisuabari	346	717	320	636
Gaurgram	1281	1568	1198	1448
DHUPGURI				
Gosairhat Chhits	377	378	336	352
Tuklimari	1052	1420	1028	1315
Chanadipa	1229	1462	1163	1405
Jakhaikona	331	366	277	350
Garakhuta	749	901	675	844
Bamantari	1231	1415	1140	1291
Gosairhat Forest	499	610	477	543
Totopara Tea Garden	1871	1572	1921	1636
Lakshmikantapur Tea Garden	551	604	529	625

Jalapara	283	306	277	301
MAL				
Kalagaity	195	157	170	144
Sundaribasti	70	144	75	146
Kodalkati	1348	1556	1253	1511
Purbba Sangapara	768	924	738	872
Nipuchhapur	1101	1297	1047	1224
Ellenbury Tea Garden	1269	1254	1188	1216
Purbba Totgaon	103	144	90	146
Tunbari Tea Garden	586	604	539	600
Saogaon	338	501	339	480
Basusuba	1113	1326	1005	1189
MATIALI				
Engo Tea Garden	496	510	507	553
Paschim Batabari	139	148	143	149
Chhaoaphali	264	304	232	290
NAGRAKATA				
Upur Kalabari	632	732	603	622
Hridaypur	1171	1281	1083	1235
Ghasmari	789	888	700	799

Source-Census of India, 2001, 2011

4.7.2 Occupational Structure

The demographic structure as well as the economic and social development of an area depends upon the occupational structure of the population. The higher rate of working population in different sectors of economy implies a higher rate of economic development of an area depending upon the availability of the resources, socio-cultural conditions and the structure of demography. The study of occupational structure of any area is of immense significance for the formulation of strategies and for the development of human resource. On the basis of economic composition, the population can be categorized into two groups: (a) economically active or labour force of an area and the (b) economically inactive or the dependent population of an area.

An economically active population comprises both males and females, who are engaged in the production of economic goods and services over time and space. An economically active population constitutes the core of the economic system. An economically inactive population is the dependent population who are not engaged in the production of economic goods and services. The economically inactive population consists of the home-makers, students, income-recipients etc. The analysis of occupational structure of an area holds an important place as it exerts vital influence on the socio-economic structures of the

working population. *Occupation is a paramount importance among all the social attributes of any individual or group. However, occupation depends upon the degree of economic development and sophistication of any area* (Ghosh, 1985).

A worker is one who participates in economically productive work. As per Census, 1981, persons who did not work during the reference period (i.e. 183 days or more) are referred as non-workers. The economic status of a person can be classified as: main, marginal and non-worker. Workers who had worked for the major part of the reference period (183 days or more) are referred as the main workers. The main workers are divided into four occupational categories:

- (a) Agricultural labourers,
- (b) Cultivators,
- (c) Household industry workers and
- (d) Other Workers.

Agricultural Labourers

A person working on another person's land for wages in money or kind is regarded as an agricultural labourer.

Cultivators

A person is considered as a cultivator if the person is engaged in cultivation of land as a single worker or the household is engaged in cultivation of land either owned or held from government or held from private persons or institution for payment in cash or kind.

Household Industries

Household Industry is an industry organized by one or many members of the household at home or within the village in rural areas. Household Industry relates to the production, processing, servicing, repairing or making and selling of goods.

Table 4.11: Main Workers of the Sampled Villages of Jalpaiguri District, 2011

Sampled villages	Total	Main workers (numbers)			
		Cultivators	Agricultural Labourers	Household Industry Workers	Other Workers
Araji Bhelakoba I	122	23	50	0	49
Gadheaganj	860	147	278	6	429
Badlagachha	537	115	68	1	353
RAJGANJ	1519	285	396	7	831
Araji Amarkhana	115	23	3	0	89
Maria Kamala Pukhari	125	28	18	1	78
Shakati	1130	314	327	10	479
JALPAIGURI	1370	365	348	11	646
Purbba Dobbari	36	36	0	0	0
Kajaldighi	483	185	210	30	58
Gopalganj	120	31	45	0	44

Sisuabari	264	92	120	1	51
Chapgar	794	290	348	5	151
Purbba Baragharia	882	396	287	3	196
Purba Sisuabari	398	127	152	1	118
Gaurgram	910	502	349	5	54
MAYNAGURI	3887	1659	1511	45	672
Gosairhat Chhits	239	85	115	0	39
Tuklimari	1072	219	793	0	60
Chanadipa	892	266	439	1	186
Jakhaikona	197	72	52	3	70
Garakhuta	477	232	196	0	49
Bamantari	762	397	289	3	73
Gosairhat Forest	165	124	33	0	8
Totopara Tea Garden	880	1	13	1	865
Lakshmikantapur Tea Garden	309	3	57	0	249
Jalapara	226	108	95	1	22
DHUPGURI	5219	1507	2082	9	1621
Kalagaity	17	2	2	1	12
Sundaribasti	29	4	19	3	3
Kodalkati	821	271	358	17	175
Purbba Sangapara	564	337	127	1	99
Nipuchhapur	694	154	316	2	222
Ellenbury Tea Garden	642	17	58	3	564
Purbba Totgaon	96	88	0	0	8
Tunbari Tea Garden	347	3	0	0	344
Saogaon	189	169	1	0	19
Basusuba	571	239	223	13	96
MAL	3970	1284	1104	40	1542
Engo Tea Garden	45	2	0	3	40
Paschim Batabari	72	26	32	0	14
Chhaoaphali	200	10	1	0	189
MATIALI	317	38	33	3	243
Upar Kalabari	406	231	95	7	73
Hridaypur	655	249	287	0	119
Ghasmari	415	130	48	3	234
NAGRAKATA	1476	610	430	10	426

Source- Census of India, 2011

The total numbers of the 4 categories of main workers of the sampled villages of Jalpaiguri district has been depicted in Table 4.11.

Other workers

The remaining workers (other worker than cultivators, agricultural workers and household industry workers) are known as other workers. They comprise of the teachers, factory workers, government officials, workers engaged in business and trade, transport and communication, banking sector, construction workers, social workers, workers engaged in the field of entertainment, etc.

Table 4.12 reveals the occupational structure of the study area based on the sampled villages of the district. The main workers or the working population has been divided into four categories who are engaged in the diverse sectors of economy (Fig. 4.8).

Table 4.12: Occupational Structure of Jalpaiguri district

C.D. Blocks	Cultivators (%)	Agricultural Labourers (%)	Household Industry Workers (%)	Other Workers (%)	Non Workers (%)
Rajganj	5.16	7.16	0.13	15.04	72.51
Jalpaiguri	10.35	9.86	0.31	18.31	61.17
Maynaguri	13.93	12.69	0.38	5.64	67.36
Dhupguri	9.91	13.69	0.06	10.66	65.69
Mal	9.03	7.77	0.28	10.85	72.07
Matiali	2.05	1.78	0.16	32.92	63.09
Nagrakata	12.53	8.83	0.21	8.75	69.68
Total	32.36	33.24	0.70	33.68	68.70

Source- Primary Census Abstract, Jalpaiguri district, 2011

Cultivators: The highest percentages of cultivators has been observed in Maynaguri block with 13.93% and Nagrakata block with 12.53% and lowest has been observed at Matiali block with 2.05% since the people are engaged in non-farm occupations apart from their traditional agricultural work.

Agricultural Labourers: The highest percentages of agricultural labourers has been obtained in Dhupguri block with 13.69% followed by Maynaguri and Jalpaiguri block, and the lowest percentage of labourers has been obtained in Matiali block with 1.78% due to the presence of tea factories which supports a large amount of labourers. Thus lower percentage of agricultural labourers indicates that people are changing their occupation according to the development of the region.

Household Industry Workers: The highest proportion of household industry workers has been obtained in Maynaguri block with 0.38% followed by Jalpaiguri block and lowest percentage of the workers has been observed in Dhupguri block with 0.06% followed by Rajganj block as the workers are engaged in the cultivation of paddy in this part of the study area.

Other Workers: The highest proportion of other workers has been observed in Matiali block with 32.92% followed by Jalpaiguri block and lowest percentage of the workers has been found in Maynaguri block with 5.64% followed by Nagrakata block. The higher share of the other workers indicates the engagement of the rural population in non-farm activities of the study area. However, the percentage is lower for Maynaguri block due to the larger share of cultivators and agricultural labourers.

Non Workers: Persons who did not work during the reference period (183 days) are referred as non-workers or the economically inactive population. The highest percentage has

been found in Rajganj block with 72.51% and the lowest percentage has been obtained in Jalpaiguri block with 61.17%. They are the dependent population of the study area who are not engaged in economically productive work and it constitutes students, persons engaged in regular household activities and the retired persons.

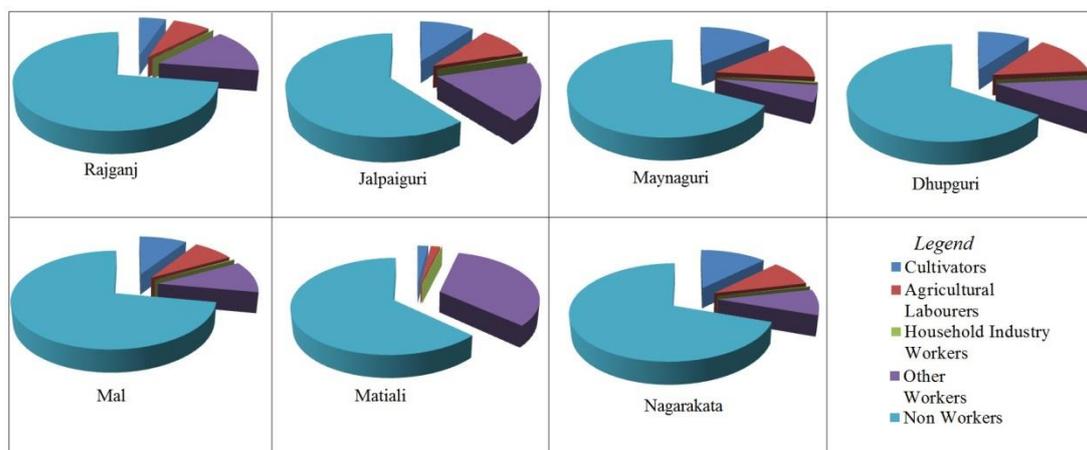


Fig. 4.8: Occupational structure of the sampled villages of Jalpaiguri district
Source- Primary Census Abstract, Jalpaiguri district, 2011

4.7.3 Religion

Population composition is an important aspect of demographic study. It deals with the people of different religion in a population group. According to field survey, 2015-2016, in the 7 community development blocks of Jalpaiguri district it has been observed that Hindus and Muslims are the two major religious groups in the study area.

Table 4.13: Population Composition by Religion

C.D. Blocks	Hindu (hh)*	Hindu (%)	Muslim (hh)*	Muslim (%)	Christian (hh)*	Christian (%)
Rajganj	43	66.15	22	33.80	0	0.0
Jalpaiguri	51	86.44	8	13.56	0	0.0
Maynaguri	171	97.15	5	2.85	0	0.0
Dhupguri	169	80.86	26	12.44	14	6.70
Mal	132	66.00	49	24.50	19	9.50
Matiali	39	97.5	0	0.00	1	2.50
Nagrakata	70	86.42	7	8.64	4	4.94
Total	675	81.32	117	14.09	38	4.57

Source- Field survey, 2015-16
**Numbers of Households*

It is evident from Table 4.13 that Jalpaiguri district is predominantly a Hindu dominated region and 81.32% Hindu households has been observed in the sampled villages of the district. The highest percentage of the Hindu households has been observed in Maynaguri block with 97.15% (Fig. 4.9).

Further, 14.09% Muslim households has been observed in the sampled villages of the district where the highest percentage has been found in Rajganj block with 33.8%. 4.57% Christian households has been obtained in the sampled villages of the district where the highest percentage has been found in Mal block at 9.5%. It has been observed that the major proportion of Hindu household has been found in Maynaguri, Jalpaiguri and Nagrakata blocks. Similarly, the larger proportion of Muslim household has been found in Rajganj, Mal and Dhupguri blocks whereas the major proportion of Christian household is in Mal block followed by Dhupguri and Nagrakata block.

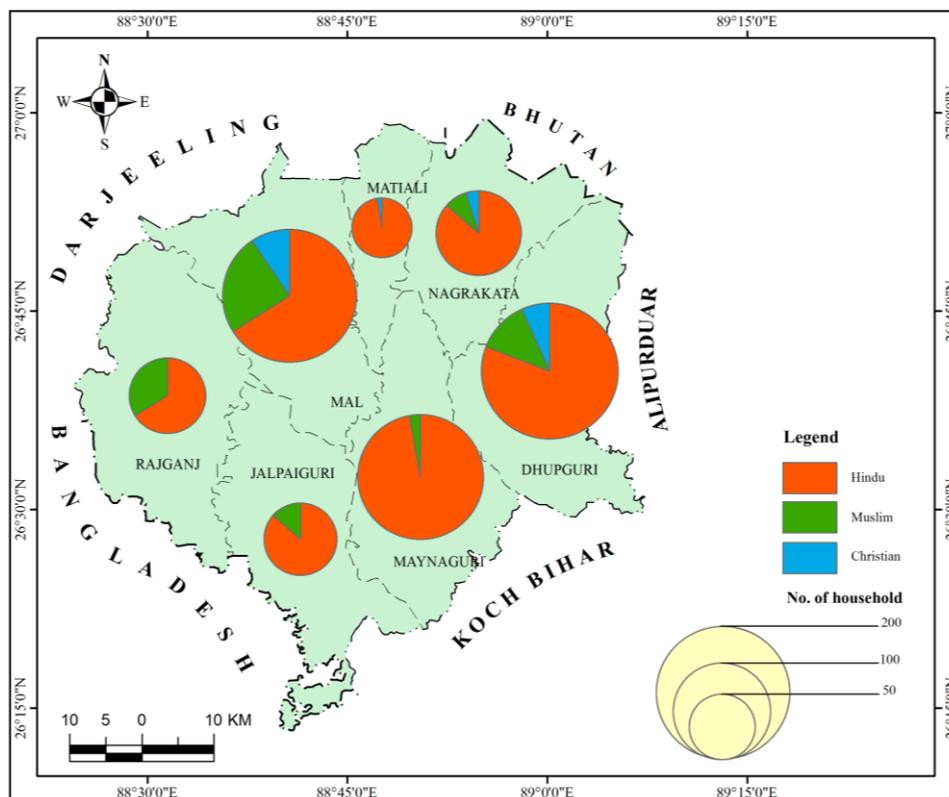


Fig. 4.9: Population Composition by Religion of Jalpaiguri district

Source- Computed by researcher, 2016

4.7.4 Ethnic Structure

Caste is a basic attribute of the Indian social structure. Social hierarchy is based on caste and it is this philosophical vision that determines the behavior of millions of Indian people in whichever walk of life they are (Ahmad, 2004). Scheduled Castes and Scheduled Tribes are the important ethnic segments of the population of our society. A tribe is an age-old indigenous, by and large unstratified, and egalitarian ethnic group in both appearance and content (Thakur and Sharma, 2012). The study of the proportion of Scheduled Caste and Scheduled Tribe population living in the rural areas of Jalpaiguri district is of vital importance because it helps in analyzing the quality of their role in the process of socio-

economic development. *India being a melting pot of various races and tribes presents multifaceted ethnic composition* (Bhattacharya, 1978). However, in Jalpaiguri district higher concentration of scheduled castes and scheduled tribes population has been observed. The population is broadly divided into four minor social groups:

- (a) Scheduled Caste (SC)
- (b) Scheduled Tribe (ST)
- (c) Other Backward Caste (OBC)
- (d) General

Table 4.14 reveals that the blocks of Jalpaiguri district is dominated by the Scheduled Caste population. There exists a widespread disparity in the spatial distribution of SC population. 48.19% SC household has been obtained in the sampled villages of the district (Fig. 4.10). It varies from 2.5% in Matiali block to 93.75% in Maynaguri block followed by Jalpaiguri, Dhupguri and Rajganj blocks.

During the field survey 2015-16, tribal groups such as; Lodha, Mech, Rabha, Mahali, Oraon, Santhan and Munda is found in the rural areas of the district. 24.57% ST household has been observed in the study area. In Rajganj and Jalpaiguri blocks none of the Scheduled Tribe's household has been found whereas the highest share of ST household has been obtained in Matiali block with 92.5% followed by Nagrakata block.

Table 4.14: Ethnic Structure (household level)

C.D. Blocks	Scheduled Caste (SC)	(SC) %	Scheduled Tribe (ST)	(ST) %	Other Backward Caste (OBC)	(OBC) %	General	General %
Rajganj	17	26.15	0	0.0	37	56.92	11	16.93
Jalpaiguri	78	78.0	0	0.0	6	10.17	7	11.8
Maynaguri	165	93.75	1	0.57	7	3.98	3	1.70
Dhupguri	108	51.7	63	30.14	19	9.08	19	9.08
Mal	55	27.5	72	36.0	48	24.0	25	12.5
Matiali	1	2.5	37	92.5	0	0.0	2	5.0
Nagrakata	8	9.87	31	38.27	5	6.18	37	45.68
Total	400	48.19	204	24.57	122	14.69	104	12.53

Source- Field survey, 2015-16

14.69% OBC household is in the sampled villages of the district. The highest concentration of OBC household has been observed in Rajganj block with 56.92% followed by Mal block with 24.0%. 12.53% household belonging to general castes has been observed during the field survey. The highest percentage of general castes household has been observed in Nagrakata block with 45.68% followed by Rajganj and Mal blocks in the study area.

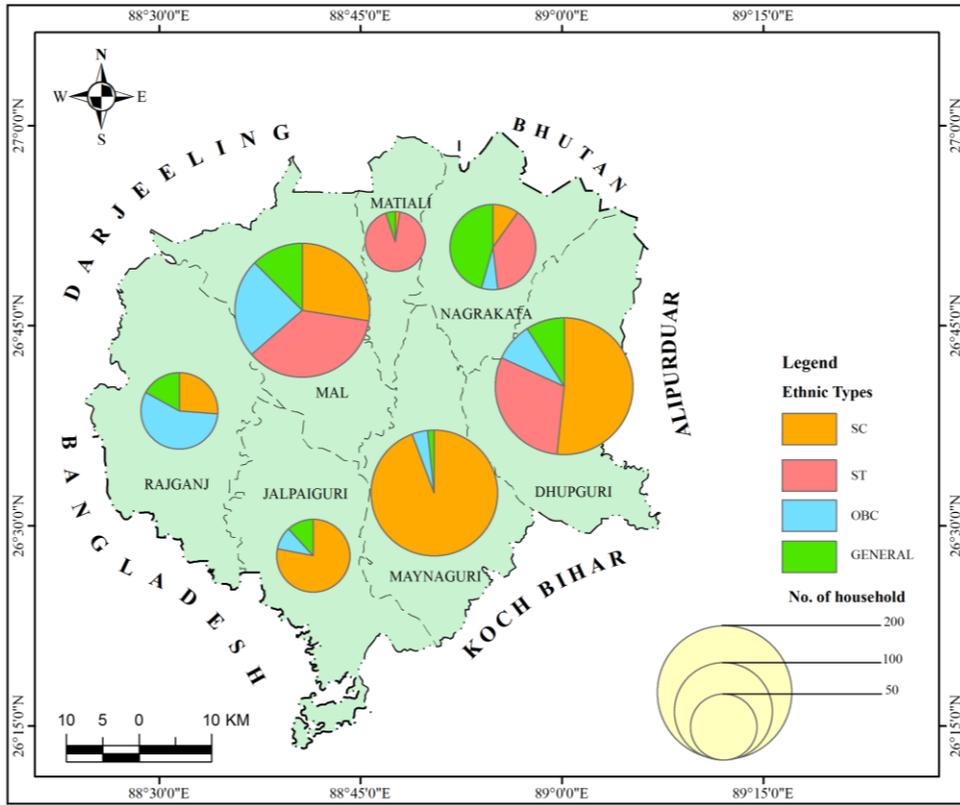


Fig. 4.10: Ethnic Structure of Jalpaiguri district

Source- Computed by researcher, 2016

4.7.5 Age Sex Composition of Population

Demographic structure consists of the various aspects of population studies and age sex structure is one of the important aspects of it. The collection of data on male-female ratio and the age structure of population are necessary in order to analyze the factors of population change. Table 4.15 reveals the age and sex structure of the sampled population of Jalpaiguri district and has been grouped into thirteen broad categories. However R.C Chandna, (1986) has categorized the population into three broad age groups which are as follows:

- i.) The young (below 15 years of age)
 - ii.) The adult (age group between 15-59 years)
- The old age group (age of 60 years and above)

Following his classification, the young age group includes children below 15 years of age which accounts for 27.65% of the total sampled population (Fig. 4.11). The adult age group comprises of population falling in the age group between 15-59 years which constitutes 65.73% of the total population and the old age group who have attained the age of 60 years and above accounts for 6.62% of the total sampled population in the sampled villages of Jalpaiguri district.

Table 4.15: Age Sex Composition of Population

Age group	Male	Female	% of Male	% of Female
0-4	113	135	5.66	7.23
5-9	188	199	9.42	10.65
10-14	220	213	11.03	11.40
15-19	259	229	12.98	12.26
20-24	177	195	8.87	10.44
25-29	146	179	7.32	9.58
30-34	158	128	7.87	6.91
35-39	139	148	6.92	7.99
40-44	149	119	7.47	6.37
45-49	126	92	6.32	4.93
50-54	99	57	4.96	3.05
55-59	78	57	3.91	3.05
60+	155	101	7.77	5.41
Total	2007	1852	100	100

Source- Field survey, 2015-16

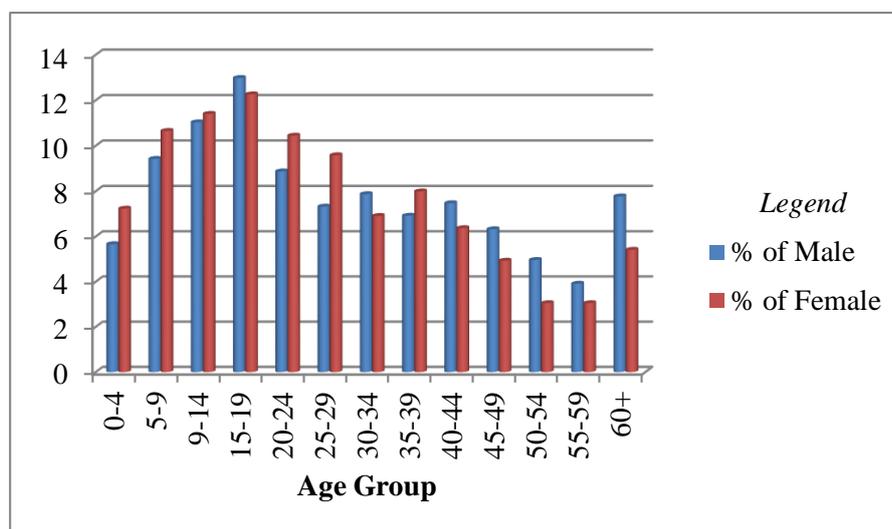


Fig 4.11: Age Sex Composition of Population of Jalpaiguri district

Source- Computed by researcher, 2016

4.7.6 Dependency Ratio

Another measure to study the structure of population is the dependency ratio. Demographers employ dependency ratio to measure the impact of age composition on the livelihood activity of the population (Bogue, 1969). Dependency ratio indicates the number of dependents per 100 persons and may be computed on the basis of the broad age groups. i.e. below 15 or the young dependents, 15-59 or the working population and the old dependents who are either or above the age 60.

The dependency ratio is computed with the help of the following formula:

$$\text{Dependency Ratio} = \frac{P_{(0-14)} + P_{60}}{P_{(15-59)}} K$$

Where $P_{(0-14)}$, P_{60} and $P_{(15-59)}$ denote the populations in the age groups 0-14, 60+ and 15-59 respectively and K is 100

$$\text{Dependency Ratio} = \frac{433 + 256}{2539} 100 = 27.13$$

As stated by Bhende & Kanitkar, 2006, the measure of dependency ratio gives us an idea of the economic dependency in any population. However the dependency ratio for the sampled population of Jalpaiguri district is 27.13.

4.8 Level of Demographic Development

Demographic development holds a crucial role in the process of rural development. It helps to understand the quality of population in a region. In order to identify the inter-block disparities in the level of demographic development among the blocks of Jalpaiguri district, considerable emphasis are placed on the selection of variables. Z-score method transforms the individual raw data into standard score and therefore it has been applied for identifying the level of development based on the demographic scores.

For the analysis of the data the following six indices have been taken into account: rural density persons/km² (X_1), percentage of rural population growth (X_2), sex ratio of rural population/1000 males (X_3), rural literacy rate in percentage (X_4), percentage of agricultural labourers to total workers (X_5) and percentage of cultivators to total workers (X_6).

For analyzing the development scenario in the study area as a whole the results of the standard score for all the indicators are taken collectively, and on the basis of the values of the composite standard score of variables, the blocks have been divided into high, medium and low category which clearly depicts the disparities in the level of demographic development in the different blocks of Jalpaiguri district. Table 4.16 depicts the z-score values of the demographic development in the blocks of Jalpaiguri district.

Table 4.16: z-score of Demographic Development in the blocks of Jalpaiguri district

C.D. Blocks	X_1	X_2	X_3	X_4	X_5	X_6	Composite scores
Rajganj	-1.34	-2.01	-1.35	0.54	-0.49	-0.92	-0.91
Jalpaiguri	0.31	-0.35	-0.36	0.89	0.67	0.32	0.36
Maynaguri	0.51	0.98	-1.00	1.26	1.79	1.19	0.78
Dhupguri	1.47	0.48	0.62	0.03	0.25	0.22	0.64
Mal	0.16	0.31	0.80	-0.62	-0.31	0.00	0.02
Matiali	0.13	-0.13	-0.10	-0.48	-1.17	-1.68	-0.49
Nagrakata	-1.26	0.70	1.40	-1.63	-0.73	0.85	-0.40

Source: Computed by Author

Table 4.17 depicts that the high level of demographic development has been observed in Dhupguri (0.64), and Maynaguri (0.78) blocks located in the eastern and south-eastern part of Jalpaiguri district.

Table 4.17: Level of Demographic Development

Category	Z score range	Name of the Blocks
Low	<0	Rajganj, Matiali, Nagrakata
Moderate	0 – 0.45	Jalpaiguri, Mal
High	>0.45	Maynaguri, Dhupguri

Source- Calculated by Author

These blocks have obtained high values in terms of the percentage of rural population growth, sex ratio of rural population/1000 males, rural literacy rate in percentage, percentage of agricultural labourers to total workers and percentage of cultivators to total workers. However, It is due to the fact that the cultivation of food crops is dominant in these part of the study area along with the predominance of farming households which requires large number of agricultural labourers.

Again, the blocks which display moderate level of development is Jalpaiguri (0.36), and Mal (0.02) blocks. The main variables which appear to have influenced the moderate level of development includes the sex ratio of rural population/1000 males, percentage of rural literacy rate, percentage of cultivators to total workers and percentage of agricultural labourers to total workers.

Whereas, the low level of demographic development based on composite standard scores is confined to three blocks of Rajganj (-0.91) and Matiali (-0.49) and Nagrakata (-0.40) in Jalpaiguri district. In terms of rural population density/km², growth of rural population and in terms of the percentage of cultivators and agricultural labourers to total workers the variables has negative scores in this category. Owing to the predominance of tea gardens in the northern and western part of the study area the households of these blocks have a meager proportion of cultivated land and consequently the percentage of agricultural labourers are lower. Moreover, the percentage of rural literacy rate is low in Matiali and Nagrakata blocks of the study area. Hence in order to reduce the disparities in the rural literacy rate the educational programmes should be properly implemented in the study area along with the proper monitoring and evaluation of the programmes.

4.9 Conclusion

From the above discussion it has been concluded that broadly the demographic study not only includes the quantitative study of population but also the interrelationships between population and social, economic and cultural variables. However in Jalpaiguri district from the post-independence period to 2011 Census, the distribution of rural population is high in the eastern and particularly in the south eastern part of the district while the northern part is sparsely inhabited. Though the rural population had grown rapidly during 1981-91 and in

1991-2001, but in 2001-11 there is a decline in the growth rate of rural population in Rajganj, Jalpaiguri and Matiali blocks especially due the out migration of the adult age group in other urban areas for better economic facilities. According to Census 2011, the average density of rural population per km² for Jalpaiguri district is 483 persons. The district has observed an increasing trend in the sex ratio and literacy rate from 1951-2011. It has been observed that the study area is predominantly a Hindu dominated region and dominated by the Scheduled Caste population. However, necessary measures should be taken regarding the expansion of non-farm activities part from the traditional agricultural activities in the study area for the socio-economic development of the district.

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