



## Research Paper

### Growth, Distribution and Composition of Population in Chhatarpur District (Madhya Pradesh): A Geographical Analysis

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**Abstract:** The need of demographic analysis is quite significant for management and development planning of a region. Growth, distribution and composition of population are key issues in any population studies. The Geographical study of population growth of an area is of vital significance for understanding its dynamism as well as for planning at the local and regional levels. The present study seeks to analyse trend of growth, spatial distribution and composition of population in Chhatarpur district of Madhya Pradesh, located in the central part of the Bundelkhand region. The study is based on data collected from secondary and primary sources. Descriptive statistical methods and tables and graphs have been used to analyse and portray the demographic data respectively. The study reveals that the growth of population, its distribution and composition is not uniformly distributed throughout the study area. The uneven spatial distribution in demographic attributes is associated with physical,

ecological and socio-economic factors in the region.

**Keywords:** Population Growth; Distribution; Density; Composition; Geographical Analysis.

#### **Introduction:**

The Geographical study of population growth of an area is of vital significance for understanding its dynamism as well as for planning at the local and regional levels. Growth and distribution of population are two key issues in any population studies (Rubenstein, 2010). From the time of inception of human development, human beings have been influenced by various agents such as natural, economic, social, cultural or political factors. Collective impact of all these factors on the growth of human population, process of decision making, place of their stay as well as the immigration have been noticed. Physical, social and biological needs of human beings have majorly affected its growth, and they also contribute a lot in the

continued development of the entire human race as in these factors variation and dynamism are there which lead to the variation and dynamism of human growth, distribution and immigration.

Human being is an agent of development, therefore, the study of its development becomes crucial for the analysis of population in a particular region. Study of population growth helps to understand the social, economic and cultural environment of a particular region and at the same time it not only helps to understand the prevailing problems in the region but also to provide suggestions based on field study.

Population growth is used as an indicator of socio-economic development, cultural background, historical events and political streams of thoughts of the region (Chandna, 1987, p.44). The apparent effect of population growth is explicit in the various constituents of population mainly include population distribution and its density, migration demography, biological, social and economic features and their characteristics. These elements together control the pace of population growth in any region and region under study is not exception to this.

What is the trend of population growth and pattern of their distribution in the study area? Have there been significant changes in growth and density of population at the sample village level? What is the comparative figure of population growth among the total population, male, female, infant and SC population in the study area?, are few important questions to which the present study is addressed.

### **The Study Area**

The district Chhatarpuroccupies a central position in Bundelkhand region of the state of Madhya Pradesh. Chhatarpur was founded by great Bundela King Maharaja Chhatrasal Singh JooDeo in the year 1707.

The district is spread over an area of 8687.36 sq. kmand is located at the northern boundary of the state, between  $24.06^{\circ}$  &  $25.20^{\circ}$ N latitudes and  $78.59^{\circ}$  &  $80.26^{\circ}$  E longitudes (Fig. 1). It falls under the survey of India toposheet No. 54O, 54P, 63D. The district is bounded by Mohaba district U.P in the north, Panna district, in the east Tikamgarh district in the west and Sagar&Damoh district in the south. The district is divided into six Tehsil (Gourihar, Londi, Nowgaon, Chhatarpur, Rajnagar, Badamalhara and Bijawar) and eight development blocks (Gourihar, Loundi, Nowgaon, Chhatarpur, Rajnagar, Bijawar, Badamalhera&Buxwaha). There are 1080 inhabited villages in the district. As per census 2011, the total population of the district is 17,62,857.

### **Objectives of the Study**

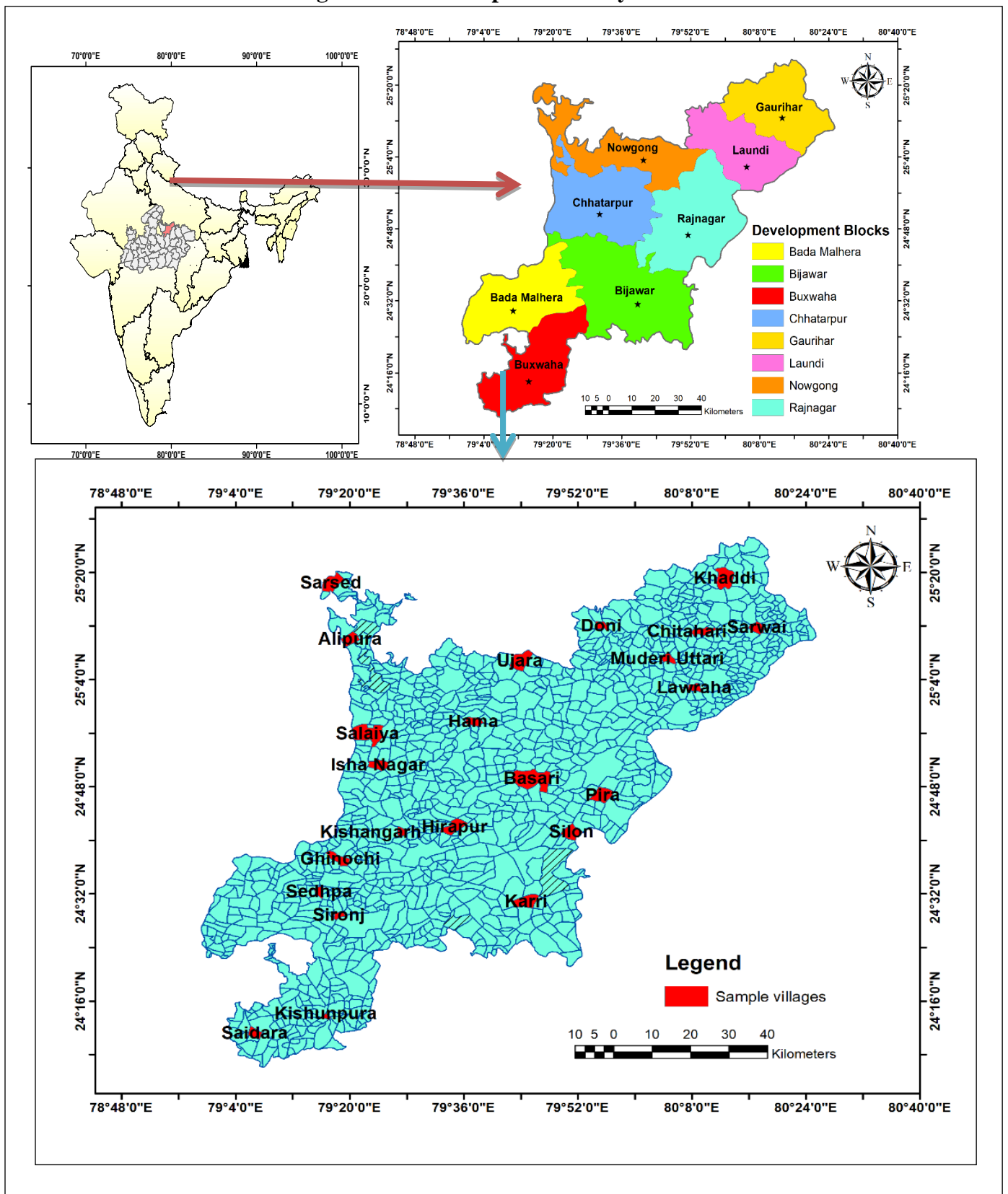
The main objective of the present study is to analyse the emerging changes and spatial variation in population growth, their distribution and composition in the study area. The study seeks to find out the reasons behind the spatial variations in population attributes in the study area.

### **Data Base and Methodology**

The study is based on data collected from secondary and primary sources. To have in depth study of demographic characteristics of the study region, 350 sample households (about 3 percent of the total) have been selected from the 23 sample villages on the basis of socio-economic variables in which 20.26 per cent households belong to general category followed by OBC, SC, ST and Muslims with 25.66, 47.70, 6.38 and 5.76 per cent respectively.

Descriptive statistical methods and tables and graphs have been used to analyse and portray the demographic data respectively.

**Fig. 1: Location Map of the Study Area**



Source: Prepared by the Author

## Results and Discussion:

### Population Growth

The term population growth has a broader meaning in geographical studies. A quantitative change in the population of a particular place, area, region within a certain period of time is known as population growth. It can either be positive or negative (Zelinsky, 1966). It is considered as the change in the size of population of a region over a given period of the time (Barclay, 1958; Bogue, 1969; Kumar and Sharma, 2014). Any change in the size of population over a period of an area have a great impact on the socio-economic as well as on the environment of an area that of the statistical figure denoting the number of human souls of

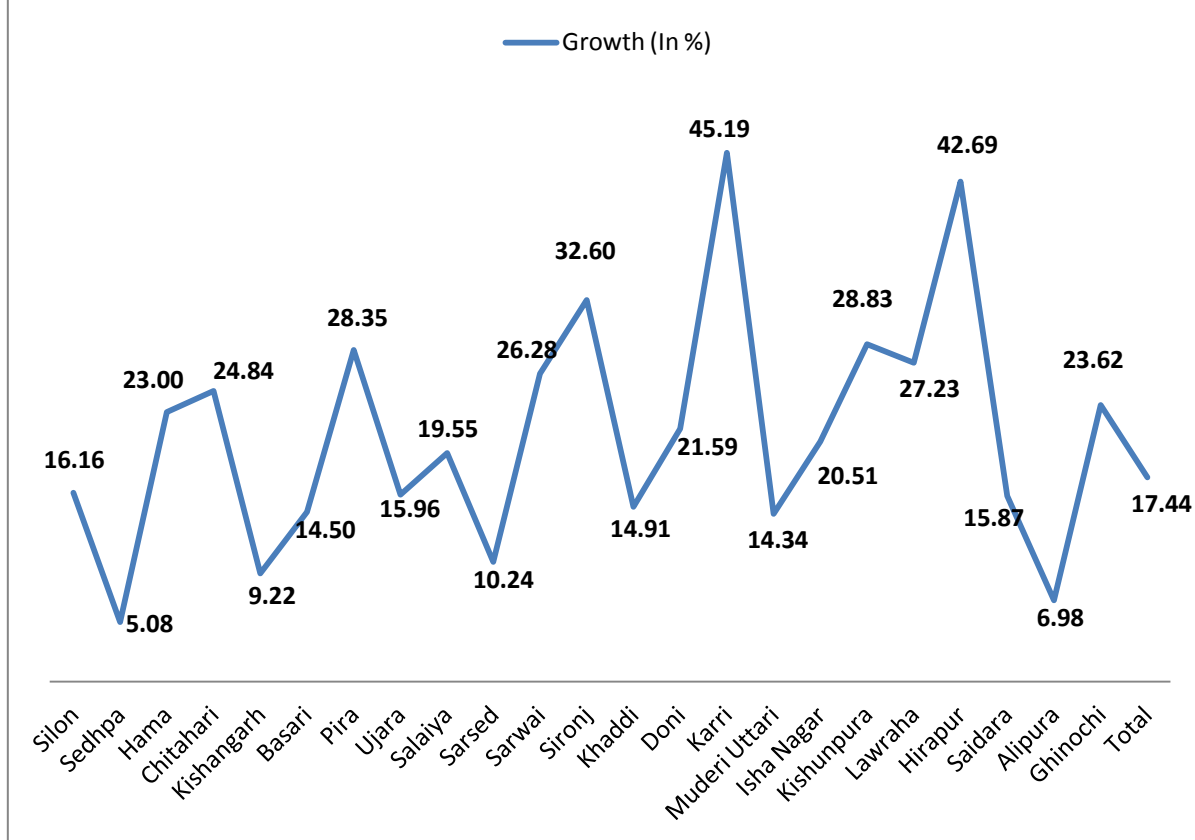
certain time (Chip, 1984). The growth of population whether positive or negative reflects the history of man's response to the environmental possibilities presenting the region (Sharma, 1978). It is controlled by the relative balance of fertility, mortality and migration which are generally influenced by six groups of factors: biological, environmental, economic, social, political, and technological (Sauvy, 1969). In the present study, the growth analysis has been done for the decades (2001-2011). To study the growth of population in the region, Census data of two decades i.e. 2001 and 2011 have been collected from District Census Handbook of Chhatarpur and has been presented in the table-1 and Fig.2.

**Table No. 1: Growth of Population in Sample Villages, Chhatarpur, MP (2001-2011)**

S.No.	Sample Village	Total Population		Growth (2001-2011)	Growth (In %) (2001-2011)
		2001	2011		
1	Silon	718	834	116	16.16
2	Sedhpa	2204	2316	112	5.08
3	Hama	1878	2310	432	23.00
4	Chitahari	1445	1804	359	24.84
5	Kishangarh	477	521	44	9.22
6	Basari	4344	4974	630	14.50
7	Pira	2176	2793	617	28.35
8	Ujara	3039	3524	485	15.96
9	Salaiya	3754	4488	734	19.55
10	Sarsed	3400	3748	348	10.24
11	Sarwai	5209	6578	1369	26.28
12	Sironj	546	724	178	32.60
13	Khaddi	4761	5471	710	14.91
14	Doni	1121	1363	242	21.59
15	Karri	239	347	108	45.19
16	MuderiUttari	1708	1953	245	14.34
17	Isha Nagar	5402	6510	1108	20.51
18	Kishunpura	777	1001	224	28.83
19	Lawraha	951	1210	259	27.23
20	Hirapur	602	859	257	42.69
21	Saidara	1663	1927	264	15.87
22	Alipura	7797	8341	544	6.98
23	Ghinochi	1109	1371	262	23.62

Source: Census of India Data, 2001 and 2011.

**Fig. 2: Growth Rate of Population in Sample Villages (2001-2011)**



During 2001-2011 the average growth rate of population in the region was recorded about 17.44 percent. Karri sample village has attended the maximum population growth of 45 per cent, whereas, it is found minimum of 5 percent in Sedhpa (Fig. 2). Sironj, Hirapur and Karri have recorded high growth rate (30% and above) in their population. Seven Villages like, Sedhpa, Alipura and others have recorded low growth rate (15% and below) whereas, others 11 villages have recorded moderate growth rate (between 16%-34%) in their population between 2001 and 2011 (Fig. 2).

Illiteracy and lack of awareness about family planning programmes are found to be the main causes for the excess growth in population in some part of the region during the period. However, with the

improved awareness and adoption of family planning methods as well as enhanced migration in search of employment appears to be main reasons for the decline in population growth in many part of the region.

#### **Distribution and Density of Population**

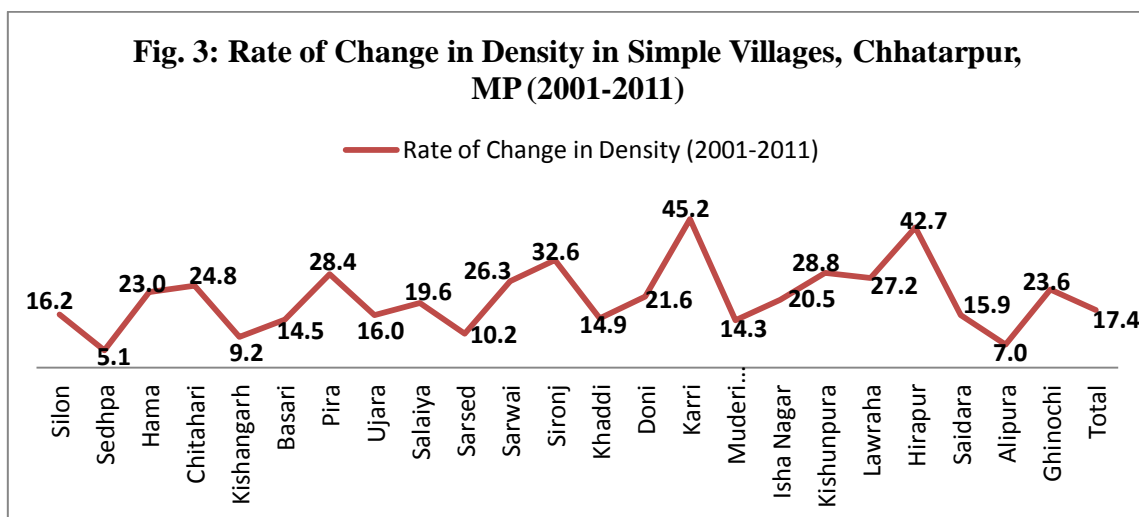
Distribution and density are two separate but intimately related concepts. Distribution refers to the ways people get located in their spatial spread, i.e., linear, dispersed, nucleated etc. density, on the other hand, is concerned with ratio between the size of population and the area (Clark, 1965).

According to 2001 Census, population density of the district was 140 person per sq.km which increased to 298 persons per sq. km in 2011, which is low as compared to the state's average of 828 persons per sq.km.

**Table 2: Density Distribution and It's Change in Sample Villages, Chhatarpur, MP, 2001-2011**

SL No.	Sample Village	Area (Sq. Km)	Density (Persons/Km <sup>2</sup> )		Rate of Change in Density (2001-2011)
			2001	2011	
1	Silon	18.6	39	45	16.2
2	Sedhpa	10.6	208	218	5.1
3	Hama	6.4	293	361	23.0
4	Chitahari	8.9	162	203	24.8
5	Kishangarh	11.7	41	45	9.2
6	Basari	23.3	186	213	14.5
7	Pira	14	155	200	28.4
8	Ujara	11.5	264	306	16.0
9	Salaiya	18.9	199	237	19.6
10	Sarsed	24.5	139	153	10.2
11	Sarwai	17.8	293	370	26.3
12	Sironj	6.2	88	117	32.6
13	Khaddi	25.9	184	211	14.9
14	Doni	8.7	129	157	21.6
15	Karri	2.6	92	133	45.2
16	MuderiUttari	7.4	231	264	14.3
17	Isha Nagar	8.1	667	804	20.5
18	Kishunpura	5.3	147	189	28.8
19	Lawraha	6.5	146	186	27.2
20	Hirapur	4	151	215	42.7
21	Saidara	5	333	385	15.9
22	Alipura	21.5	363	388	7.0
23	Ghinochi	5.02	221	273	23.6
	<b>Total</b>	<b>272.42</b>	<b>203</b>	<b>238</b>	<b>17.4</b>

Source: Census of India Data, 2001 and 2011.



The table-2 and Fig. 3, clearly shows upward trend of population density in the region during 2001-2011. During 2001 population density in the region was 203 persons per sq.km. and rose to 238 person

per sq. km. with 17.4 percent increase in last a decade. However, wide variations in pattern of population density among the sample villages have been recorded in the region. It is clear from the table no. 4.3 that

Isha Nagar having the highest density (804) among the sample villages whereas, Silon and Kishangarh with density of 45 persons per sq. km. ranked lowest among them. The spatial variation in decadal change in density is quite same as it is found in case of population growth. Sironj, Hirapur and Karri have recorded high change in density (30% and above). Seven Villages like, Sedhpa, Alipura and others have recorded low change rate (15% and below) whereas, others 11 villages have recorded moderate change rate (between 16%-34%) in their population density between 2001 and 2011 (Fig. 3). The overall enhanced density has been due to increase in irrigated area, expansion of infrastructure facilities, as well as the implementation of various developmental programmes and associated activities.

The composition of residential, industrial, commercial, transport and other services on the available land has been effected with the emerging changes in population density over the period of time. The problem of housing, increasing congestion in the residential areas as well as on the public roads, increasing pressure on natural resources, with enhanced production, increasing land degradation due to water and air pollution along with the social pollution are such

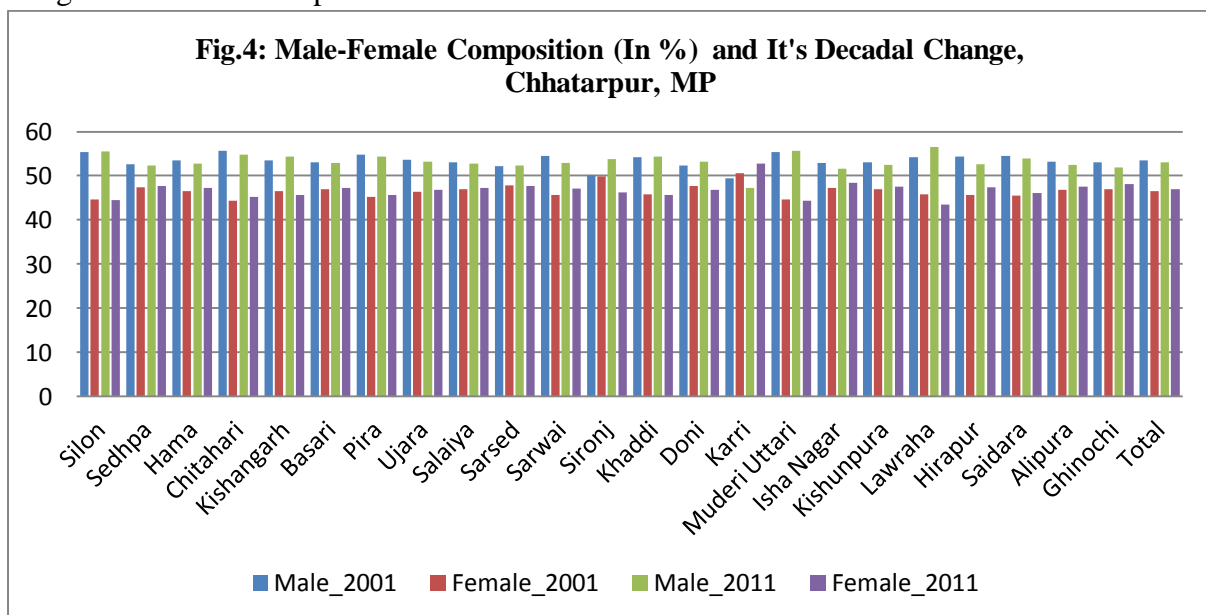
problems, which are directly associated with the increasing density of population in the region. Thus the impact of density has become evident not only on socio-economic environment but also on natural environment in the region.

### Population Composition

Population composition is studied considering various characteristics such as proportion of rural and urban population, gender ratio, age, occupational structure, caste and religion etc.

### Gender wise Composition and It's Temporal and Spatial Variation

It is clear from the table and Fig. 4 that there is insignificant spatial and temporal variation in the male-female ratio in total population in the region. In 2011, about 53 percent of total population in the region is male and 47 percent female, whereas, this ratio was about 54:46 in 2001. Kishangarh, Sironj, Doni and Lawraha recorded decline in female ratio, whereas, Karri, Hirapur, Ghinochi and others have recorded rise in it during 2001-2011. Lawraha sample village recorded highest gender gap of about 13 percent (Male 56.5% and Female 43.5%) in 2011, while, this gap was of 8% in 2001.

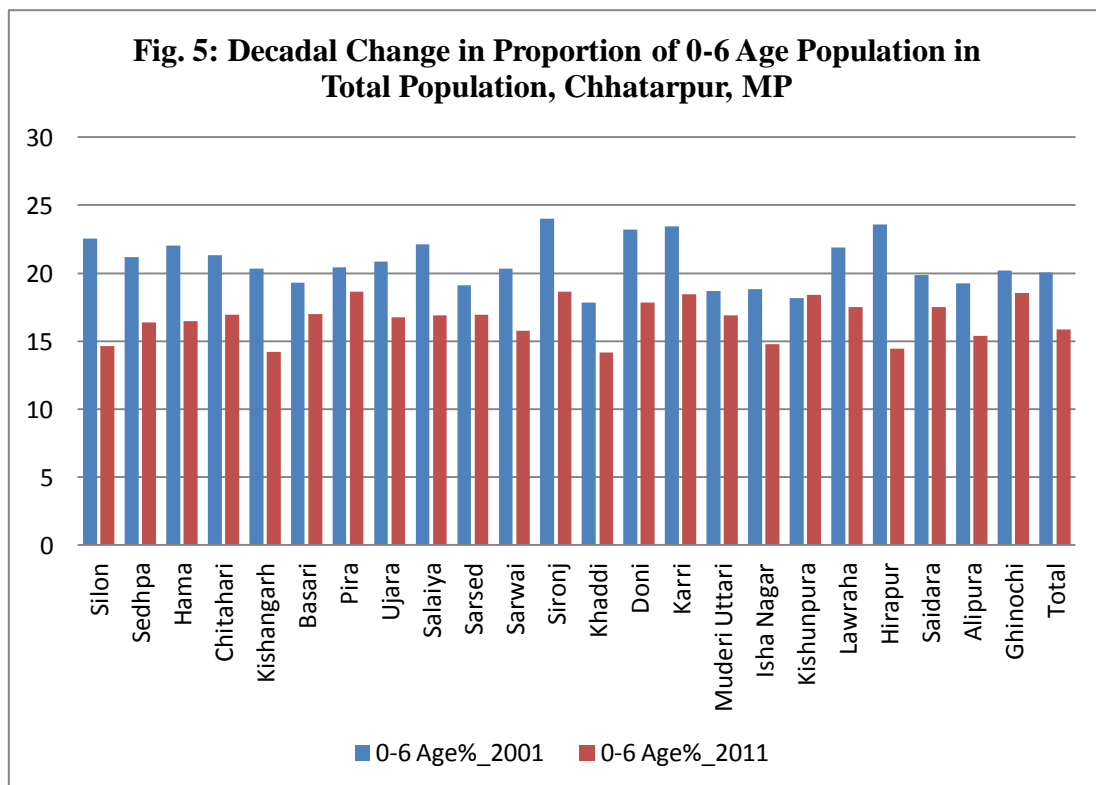


This increasing gender gap is the result of illiteracy, unawareness, poverty, unemployment and several other factors which goes in against of female ratio in total population. The government awareness programmes like, ‘Beti Bachhao-Beti Padhao’; SukanyaDhanYojna and others can play a significant role in improving this figure in the region if implemented strongly with equal interest of people their selves.

### Share of 0-6 Age Population and It’s Temporal and Spatial Variation

Zero to Six age group population is the base of demographic structure. Decreasing trend in this age group concentration in the study area (Fig. 5) indicates the gradual

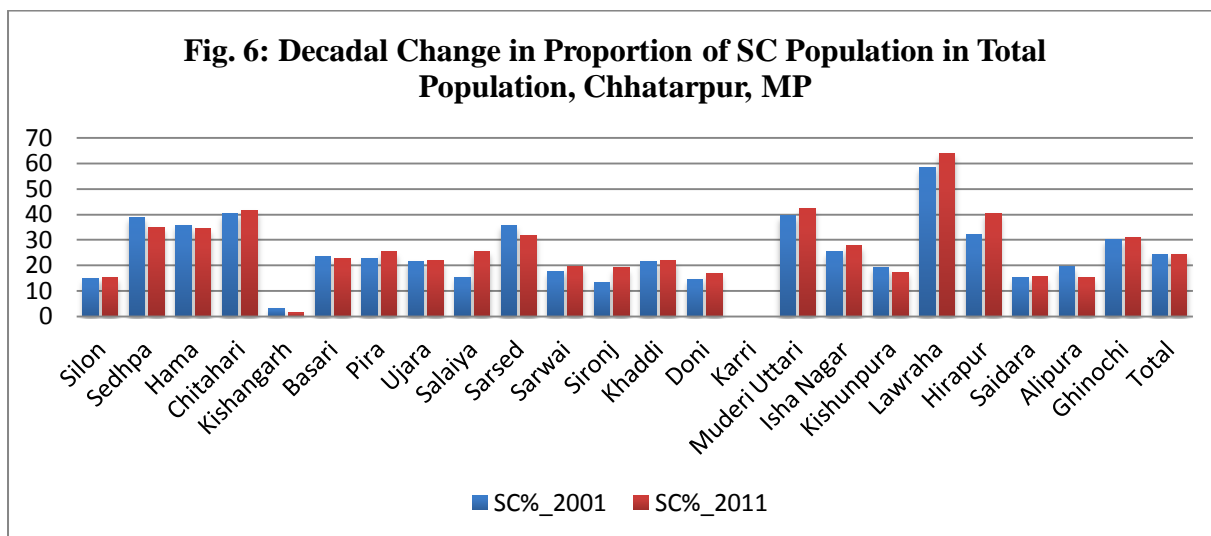
control in population growth rate which is the result of adoption of family planning approaches; increasing awareness among people regarding the benefit of small family (in positive sense); emerging resource scarcities; unemployment; low income; increasing expensiveness and isolated families (in negative sense). On an average 16 percent of the total population in the study area belongs to 0-6 age group population (2011), which was about 20 percent in 2001. Pira and Sironj having about 20 percent of their population in this age group, whereas, Silon, Kishangarh, Khaddi, and Hirapur sample villages having less than 15 percent of their population in this age group (Fig. 5).



### Share of SC Population and It’s Temporal and Spatial Variation

About 24 percent population of the region belongs to Scheduled Caste (SC) which is

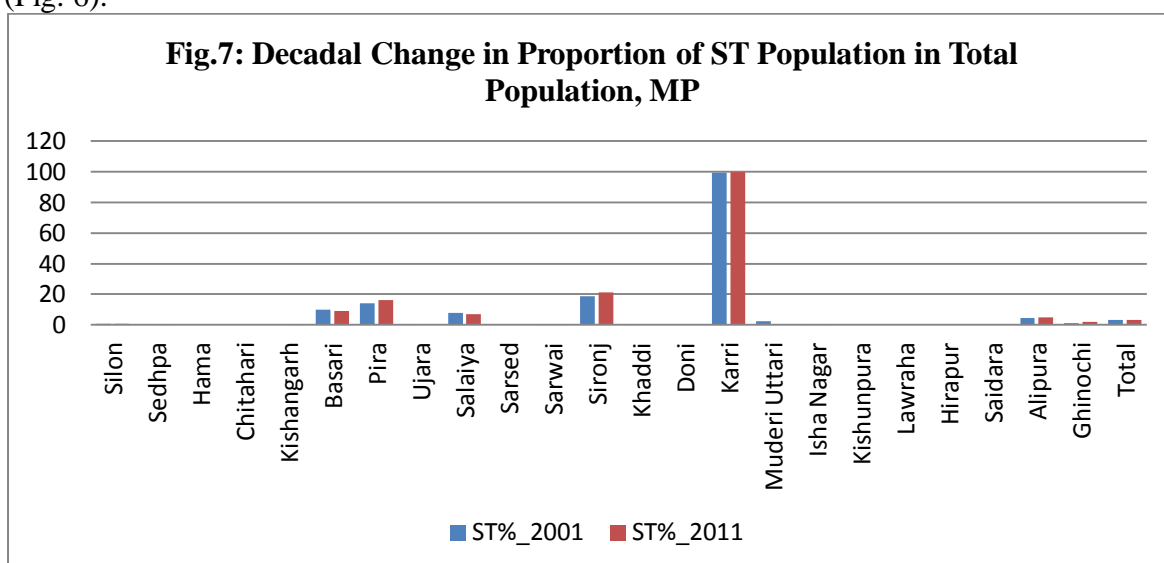
more than the national average. But this figure is not uniformly distributed across the region and neither it is uniform in terms of temporal change in it’s proportion in total population (Fig. 6).



Lawraha is having the maximum concentration of SC population (about 62% of total), whereas, it is absent in Karri sample village. Kishangarh is also having very insignificant concentration of SC people. More than 90 percent sample villages having SC share more than the national average. The decadal change in the share of SC population is also insignificant in maximum cases. Chitahari, Pira, Salaiya, Sarwai, Sironj, Doni, Muderi Uttari, Isha Nagar, Lawraha, Hirapur are villages where increase in this share have been recorded between 2001 and 2011 (Fig. 6).

**Share of ST Population and It's Temporal and Spatial Variation**

Only about 3 percent of total population belongs to Scheduled Tribe in the region. This figure is less than the national average. Most part of the study area either having zero or having very insignificant concentration of ST population in which Kerri village is exceptional, where hundred percent of population belongs to this category only. Decadal change in the share of ST population in the region found very insignificant (Fig. 7).



Source: Based on Census of India data, 2001 and 2011.

### Age Composition

Age structure is one of the significant aspects of population study, which in an effective way influences the growth of population and the socio-economic dimensions of the population in the study area. Age structure provides various information like number and proportion of old people and children dependency ratio, working population, population suitable for marriage and number of capable women for pregnancy etc. Thus, age structure in any region directly affects the

socio-economic, cultural and political composition of the region.

Age structure is studied and analysed on the basis of age groups. On the basis of physical and economic functions population is categorised into three age groups: (1) Adolescent (2) Adult and (3) old age. Though no standard intersecting point is accepted for this division, still selected respondents of the region are divided into five age groups, and are tabulated in the table-3.

**Table 3: Age-wise Composition of Population in Sample Villages, Chhatarpur, 2020-21**

S. No.	Sample Villages	Age Composition				
		Below 25 Years	25-34 Years	35-44 Years	45-54 Years	Above 54 Years
1.	Silon	58.06	15.32	16.93	5.64	4.05
2.	Sedhpa	58.62	22.41	10.34	5.17	3.46
3.	Hama	57.14	18.57	11.42	8.57	4.30
4.	Chitahari	61.11	20.83	11.11	4.86	2.09
5.	Kishangarh	57.89	26.31	10.52	2.63	2.63
6.	Basari	61.68	21.42	6.49	6.49	3.92
7.	Pira	53.01	14.45	16.86	12.04	3.64
8.	Ujara	56.73	19.23	13.46	06.73	3.85
9.	Salaiya	47.84	21.73	13.04	8.69	8.69
10.	Sased	59.09	18.18	10.60	7.57	4.54
11.	Sarwai	55.76	19.23	11.53	8.65	4.83
12.	Sironj	52.53	18.17	15.15	10.11	4.04
13.	Khadadi	56.00	20.00	12.80	8.00	3.20
14.	Doni	51.72	18.96	15.53	8.62	5.17
15.	Karri	50.00	19.44	15.27	9.72	5.57
16.	MuderiUttari	54.74	17.51	14.59	9.48	3.68
17.	Ishas Nagar	51.58	20.63	16.66	6.74	4.39
18.	Kishanpura	46.01	23.89	19.46	7.07	3.57
19.	Lawraha	54.54	18.18	9.09	9.09	9.10
20.	Hirapur	53.75	23.12	13.87	5.78	3.48
21.	Saidara	43.85	23.68	17.54	10.52	4.41
22.	Alipura	50.62	23.12	15.62	5.62	5.01
23.	Ghinochi	52.81	17.60	16.90	9.15	3.54
<b>Total Region</b>		<b>54.23</b>	<b>20.22</b>	<b>14.10</b>	<b>7.46</b>	<b>3.99</b>

Source: Based on Household Survey, 2020-2021.

The highest proportion of selected respondents is found in the age group of below 25 years with 54.23 per cent followed by 25 to 34, 35 to 44, 45 to 54 and above 54 years age groups with 20.22, 14.10, 7.46, and 3.99 per cent respectively.

Table no. 4.5 clearly shows that, 54.23 per cent of the total selected respondents belong to the younger group and most of them are below 25 years. The spatial variation is the proportion of the respondents in different age group found

very insignificant in the study area (Table 3).

### **Conclusion:**

Major factors which are found behind the population growth of the study region are as agriculture development, medical facilities and development of other infrastructure facilities. Socio-economic and biological changes in the society are recorded as the growth of population have been influencing the changes in income, landholdings, gender, age, education and social environment of the society. Illiteracy and lack of awareness about family planning programmes are found to be the main causes for the excess growth in population in some part of the region during the period. However, with the improved awareness and adoption of family planning methods as well as enhanced migration in search of employment appears to be main reasons for the decline in population growth in many part of the region.

An upward trend of population density in the region has been found during 2001-2011. In 2001 population density in the region was 203 persons per sq.km. and rose to 238 person per sq. km. with 17.4 percent increase by 2011. However, wide variations in pattern of population density among the sample villages have been recorded in the region.

The overall enhanced density has been due to increase in irrigated area, expansion of infrastructure facilities, as well as the implementation of various developmental programmes and associated activities.

The composition of residential, industrial, commercial, transport and other services on the available land has been effected with the emerging changes in population density over the period of time. The problem of housing, increasing congestion in the residential areas as well as on the public roads, increasing pressure on natural resources, with enhanced production, increasing land

degradation due to water and air pollution along with the social pollution are such problems, which are directly associated with the increasing density of population in the region. Thus the impact of density has become evident not only on socio-economic environment but also on natural environment in the region.

Insignificant spatial and temporal variation has been found in male-female ratio in total population in the region. In 2011, about 53 percent of total population in the region is male and 47 percent female, whereas, this ratio was about 54:46 in 2001. About 24 percent population of the region belongs to Scheduled Caste (SC) which is more than the national average. But this figure is not uniformly distributed across the region and neither it is uniform in terms of temporal change in its proportion in total population. On looking at the population composition it comes to the notice that the highest proportion of selected respondents is found in the age group of below 25 years with 54.23 per cent followed by 25 to 34, 35 to 44, 45 to 54 and above 54 years age groups with 20.22, 14.10, 7.46, and 3.99 per cent respectively.

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