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# Decadal Growth of Population in Mandya District – A Geographical Analysis

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## Abstract

Population is an essentially required for economic development of the country, but it should not be optimum in relation to the availability of natural resources. Population growth varies from one region to another. The rapid growth has created many problems. Population growth is an index of its economic development, social awakening, cultural background, and historical events. In this paper an attempt has been made to analyze the growth aspects and all the components and structure of population in Mandya District. The comparisons are summarized here for two periods i.e., 2001 and 2011. The present study is based on Secondary source of Data. The Secondary data related to population are collected from Census office Bangalore, District Census handbook and other various sources of secondary data. The Base Map of study area has been Geo-referenced and digitized using GIS Software. Data is analyzed through simple quantitative techniques like percentage index method. The results show that in the two decades trend of population was gradually increasing in the district, but it varies from one taluk to another.

**Keywords:** Availability; Population Growth; GIS; Social awakening

## 1. Introduction

The human resources play an important role in the economic development of the country. India is second largest populace and developing country in the world after china. The rapid growth of population has created many problems. Population growth is an index of its economic development, social awakening, cultural background, and historical events. In Karnataka the population is constantly changing. The Government of Karnataka Census Department gather

ers data on counts of people, distribution, and their characteristics to determine the changes in population. The population size and its distribution of geographical units are the most important elements in the study of population. In this paper an attempt has been made to analyze the growth aspects and all the components and structure of population in Mandya District. Considering the special aspects, the study sets sight on correlation between various demographic phenomenon and non-demographic phenomena<sup>(1-4)</sup>.

## Objectives

- To examine the taluk wise distribution and growth of population in Mandya District during 2001-2011.
- To know the population recent trend and structure in Mandya district.

## 2. Database and Methods

The present study is based on Secondary source of Data. The Secondary data related to taluk wise Population are collected from Census office Bangalore and District Census handbook of 2001 and 2011<sup>(1)</sup>. Data is analyzed through simple quantitative techniques like percentage index method. The collected information has been compiled and put in the form of maps, graphs, and tables for further analysis. The Base Map of study area has been Geo-referenced and digitized using Arc GIS Software. Thematic maps are prepared to show the distribution of population growth.

### Study Area

Mandya District is one of the most agriculturally prosperous districts in Karnataka. The district is advent with irrigation from the K.R. Sagar reservoir (During 1930's), there was substantially marked transformation in cropping patterns, composition of crops, better grown yield level, ultimately leading to better economic conditions of the people. Mandya District lies between 12° to 13° N, to 13° to 14° N Latitude and from 76° to 79° E, to 77° to 80° E Longitudes. The total geographical area of the district is 4962.44 sq.km. Out of which 2488.25 sq.km form of sown area. More than half of the district total land area is used for agricultural purpose. It's bordered by Mysore District to the west and southwest, Tumkur District to the northeast, Chamarajanagar District to the south, Hassan District to the northwest and Ramanagar District to the east. The district headquarters is Mandya city. Totally, Mandya District consists of seven taluks, such as, Mandya, Maddur, Malavalli, Srirangapatna, Nagamangala, Krishnarajpete and Pandavapura, with 32 hoblies, 233 Grama Panchayaths, and 9 towns. District consists of 1478 villages, out of which 1365 inhabited and 113 uninhabited villages. As per 2011 census, the population of the Mandya district is 1,805,769 of which male and female were 9, 05,085 and 9,00,684 respectively (Figure 1).

## 3. Results and Discussions

The dynamic population growth mainly depends upon two forces namely, natural increase in population and migration. Natural increase in population is the result of the difference between the number of births (fertility rate) and deaths (Mortality rate). The second force is due to migration of the population. Population growth or decline is controlled by a relative balance of fertility, mortality and migration

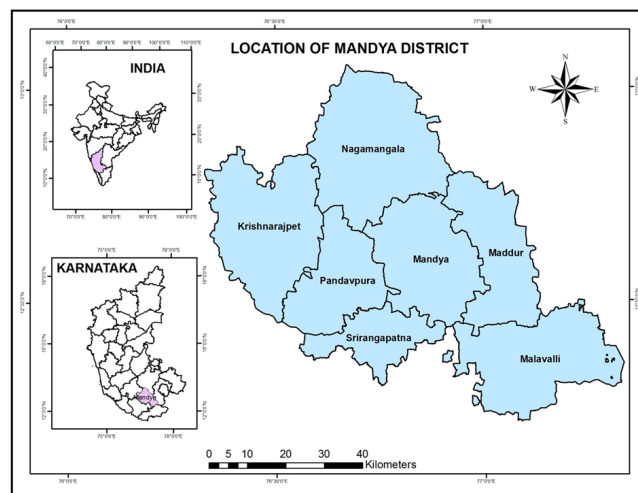


Fig. 1. Location Map of Mandya District

which are influenced by factors namely, social, economic, political, environmental, biological, and technological. These phenomena have influenced the recent trend of population growth in Mandya District.

### Taluk wise Distribution and Growth of Population

In 2001 census, Mandya had population of 1763705 of which males were 88304 and 875671 were females. In 2011, total population of the district is 1805769 of which male and female were 905085 and 900684 respectively, i.e., 42060 population is increased in the study region as per the census (Figure 2). Table 1 shows the taluk wise distribution and growth of population in two periods i.e., 2001 and 2011 census. There was change of 2.38 percent in the population compared to population as per 2001. The maximum population growth is seen in Srirangapatna taluk with 10.56% growth rate. So, it is leading in its population growth followed by 4.93% in Krishnarajpet taluk and 4.77% in Pandavapura taluk. In remaining two taluks, the growth rate was below the district average. Slow growth rate of population recorded in Malavalli i.e., 0.52% and -1.51% in Nagamangala taluks. The district is made up of plain lands and exhibits largely dry climatic conditions. But economically the waters of the rivers that flow enrich the districts.

### Taluk Wise Spatial Variation of Rural and Urban Population

Rural and Urban relationship is an important component of the population. The distribution of Rural and urban ratio in the region is studied to understand the degree of rate of growth of population varying from rural to urban and vice versa (Figure 3). It is assumed that increase in

**Table 1. Taluk wise Distribution and Growth of Population in Mandya District (2001-2011)**

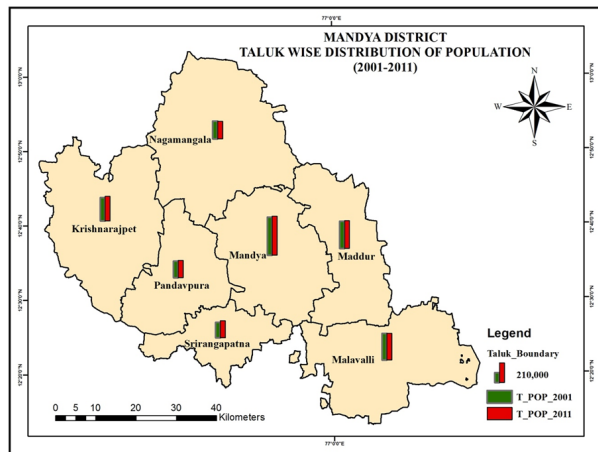
Sl. No.	Taluks	Total Population 2001	Growth Rate (%)	Total Population 2011	Growth Rate (%)
1	Krishnarajpet	248245	-8.88	260479	4.93
2	Nagamangala	190770	6.78	187897	-1.51
3	Pandavapura	175009	9.27	183352	4.77
4	Shrirangapattana	162984	11.06	180191	10.56
5	Mandya	405612	5.89	415153	2.35
6	Maddur	290783	2.84	295432	1.60
7	Malavalli	281809	6.71	283265	0.52
<b>Total</b>		<b>1763705</b>	<b>7.25</b>	<b>1805765</b>	<b>2.38</b>

Source: Mandya District Census Handbooks 2001-2011 <sup>(2)</sup>

**Table 2. Spatial variation of Rural and Urban population in Mandya District (2001-2011)**

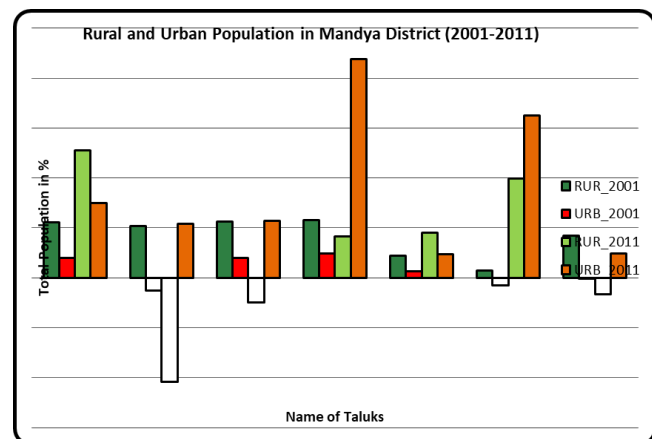
Sl. No.	Taluks	Population-2001				Population -2011			
		Rural	%	Urban	%	Rural	%	Urban	%
1	Krishnarajpet	225665	11.10	22580	25.45	234533	3.93	25946	14.91
2	Nagamangala	174718	10.31	16052	-20.85	170121	-2.63	17776	10.74
3	Pandavapura	156699	11.21	18310	-4.89	162953	3.99	20399	11.41
4	Shrirangapattana	139255	11.55	23729	8.32	146056	4.88	34135	43.85
5	Mandya	274433	4.44	131179	9.07	277795	1.23	137358	4.71
6	Maddur	264262	1.40	26521	19.92	260285	-1.50	35147	32.53
7	Malavalli	245958	8.36	35851	-3.37	245664	-0.12	37601	4.88
<b>Total</b>		<b>1480990</b>	<b>7.50</b>	<b>282715</b>	<b>5.96</b>	<b>1497407</b>	<b>1.11</b>	<b>308362</b>	<b>9.07</b>

Source: Mandya District Census Handbooks 2001-2011 & Compiled by Researcher <sup>(2)</sup>

**Fig. 2. Taluk Wise Distribution of Population in Mandya District**

population is largely added by the rural inhabitants rather than urban areas because of illiteracy and non-adaptation of family planning. But because of improvements in the medical facilities, and process of urbanization witnesses increase in the high rate of births in urban areas. Table 2 shows the spatial variation of rural and urban population in 2001-2011 censuses in the Mandya district. In 2001 the decadal variation

in urban population slightly increased due to migration from villages to towns in the district and vice versa in rural areas. According to 2011 census, the highest urban population is found in Srirangapatna taluk i.e., 43.85% followed by Maddur, K.R. Pete, Pandavapura and Nagamangala taluks. Mandya taluk registered the lowest urban population with 4.71% and the rural population decreased by -1.50, -0.12 and -2.63% found in Mandya, Malavalli taluk and Nagamangala taluks respectively.

**Fig. 3. Rural and Urban Population in Mandya District**

### Taluk wise Distribution of Density of Population and Sex Ratio

The Density of Population (population per square kilometer) in Mandya District more or less is evenly distributed (Figure 4). The topography of the district has significant effect on the population density distribution. Table 3 shows the taluk wise growth of population density and sex ratio in the district during last two decades. The density of population in the district is 355 person/Km<sup>2</sup> in 2001 to 364 person/ km<sup>2</sup> in 2011, which spreads over the 4962 sq.kms area. Among the taluks of the district, Mandya taluk accounts for the largest share 415153 population with the density 582 person/Km<sup>2</sup>, whereas, medium density is observed in the taluks of Pandavapura with 347 person/Km<sup>2</sup> and lowest is in Nagamangala taluk with 182 person/Km<sup>2</sup>. Mandya, Srirangapatna and Maddur taluk have high density in comparison to other taluks which is due to fertile soil, and good irrigation facility and urbanization and industrial development.

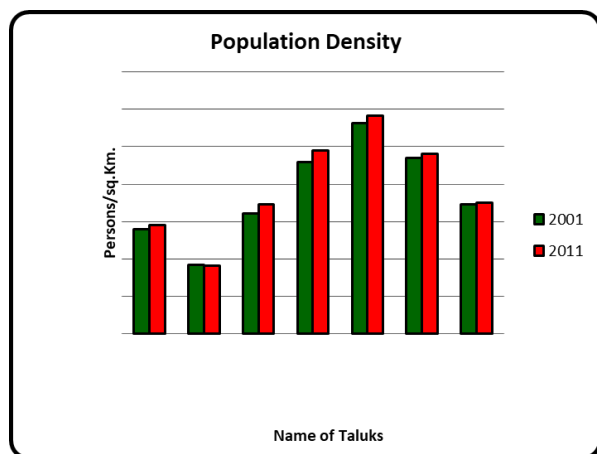


Fig. 4. Comparison between 2001 and 2011 Population Density

Sex Ratio is an index of the socio-economic condition prevailing in an area and it's a useful tool for regional analysis (Figure 5). Table 3 shows that taluk wise sex ratio. The average sex ratio was 986 females per 1000 males in 2001. It ranges from a maximum in Nagamangala taluk with 1025 females per 1000 males and Malavalli taluk has the lowest sex ratio with 965 females per 1000 males. But in 2011 Nagamangala taluk was identified with the highest sex ratio, i.e., 1006 females per 1000 males and Malavalli taluk is lowest with 985 females per 1000 males. However, in rural areas the sex ratio is 990 and in urban areas the sex ratio is 967 in 2001. Whereas, in the year 2011 sex ratio in district is 993 in rural areas and 1004 in urban areas respectively. This is because of migration of male population in search of jobs, education etc.

Table 3. Taluk wise Distribution of Density of Population and Sex Ratio in Mandya District (2001-2011)

Sl. No.	Taluk	Area in Sq.Kms	Density		Sex Ratio	
			2001	2011	2001	2011
1	Krishnarajpet	896	280	291	1010	1000
2	Nagamangala	1034	185	182	1025	1006
3	Pandavapura	528	322	347	1001	992
4	Shrirangapatana	368	459	490	973	1003
5	Mandya	713	564	582	971	990
6	Maddur	614	471	481	982	998
7	Malavalli	809	347	350	965	985
<b>Total</b>		<b>4962</b>	<b>355</b>	<b>364</b>	<b>986</b>	<b>995</b>

Source: Mandya District Census Handbooks 2001-2011 <sup>(2)</sup>

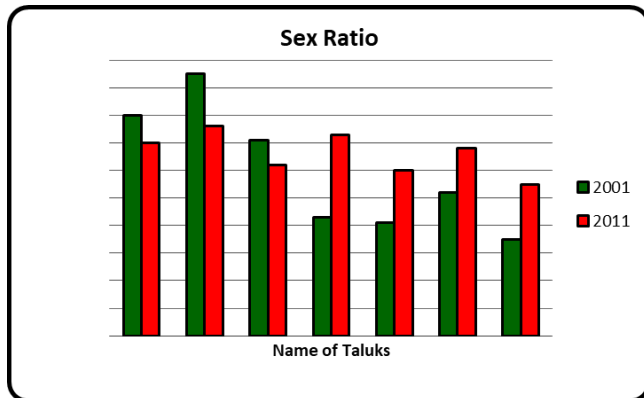


Fig. 5. Distribution of Sex Ratio 2001 and 2011

#### 4. Conclusion

Population Growth is controlled by a relative balance of fertility, mortality and migration which are influenced by factors namely, social, economic, political, environmental, biological, and technological. These phenomena have influenced the recent trends of population growth in Mandya District. The population of Mandya District is constantly changing, and

the population changes represent people's adaptation to economic development, Job opportunities, educational facilities, immigration and out-migration sources, agricultural development, and technological development concentrated in Srirangapatna, K.R. Pete and Mandya taluks. Thus, changes in the size of an area's population involve increase or decrease and net migration of population. It is clear that the changes in population growth rate will be increasingly affecting our society. As a result of which thousands of people migrated from agrarian society and hence the population has increased from decade to decade.

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