

ORIGINAL ARTICLE

Statistical Assessment of Demographic Characteristics in Dhule District, Maharashtra State, India

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ABSTRACT

Statistical assignment is considered an important process. By processing any statistical information easily and quickly, it makes the understanding faster and the results are also obtained at the right level. Population characteristics can play an important role in the economic development of any region, while population growth can be a problem or an asset in a region, depending on the characteristics of the region. Maharashtra has the highest level of urbanization in India at 45.23 percent compared to 29.5 per cent as the all-India average. The present studies seek to understand the spatial and temporal distribution of population by using 2001 and 2011 census. It also highlights the variability of the population distribution and analyses the reasons that are responsible for the uneven distribution of population. In order to study the population characteristics of Dhule district, factors such as population growth, population density, gender equality and literacy have been studied. The study on secondary data, Human resources require the study of population characteristics to inform planning and planning of various factors at the government and local levels. For this, statistical assessment is used to study the characteristics of the population and how it has changed. To study this, the population characteristics of Dhule district have been studied with the help of the said research.

Keywords: Human Resources, Demographic Characteristics, Statistical Assessment, Urbanization.

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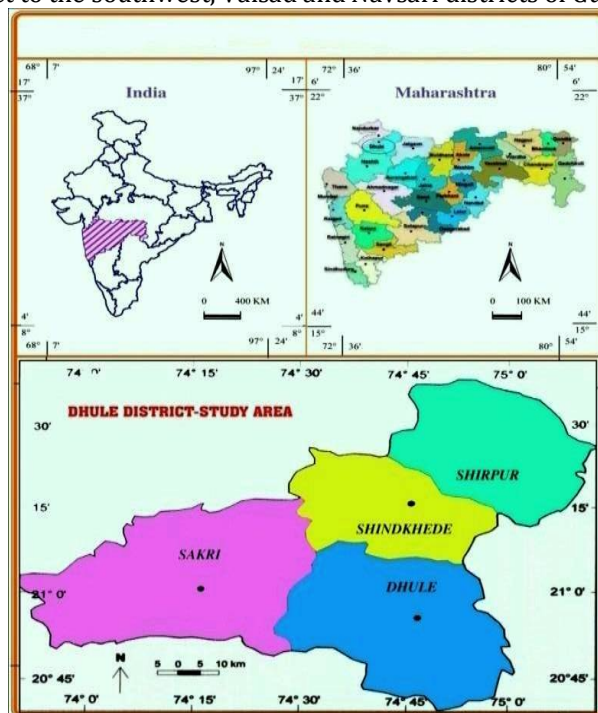
INTRODUCTION

Statistical methods and techniques are closely related to the study of population characteristics. Because of population can be studied with the help of various statistical methods. Statistics is a branch of science. It collects, organizes and analyzes data ranging from samples to whole populations. Apart from this statistical technique is used to design the study more closely and to conclude the hypothesis statistics is used in many subjects mainly in geography to understand nature and to study logic in a pure way [1]. This study uses these different methods to study factors that are more complex. The economic disparity of any region means the disparity in Natural and Human Resources, the demographic structure and the spatial pattern of the population of the region affect the overall local development. Population characteristics mainly include population growth, distribution, density, sex ratio, literacy, urbanization, activity structure [2, 3]. Studying population characteristics is ordered by these factors. Because of it is very important to study them for local, national and international planning. Over the past two decades, we have seen changes in many demographic components of each world. Due to this we can see increase in urbanization, social economic development is also seen. We can see the effect on such various factors, we can see the effect on the environment. In regions where economic development is high, the population is growing rapidly. The reason behind this is that a large number of people migrate from rural areas to urban areas or economic development regions for various occupations and employment and to achieve their

economic development. Due to this, conditions are favorable for population growth in such an area. In short, both natural wealth and human wealth are considered important for the country, so the study of population in terms of human wealth is considered very important. Literacy is considered to be the most important factor among population characteristics, because the higher the literacy rate in a geographic region, the greater the economic and social development in that area, and this factor influences other demographic characteristics [4]. Population density and population growth are considered factors affecting urbanization. Economically, urbanization is the process of creating employment and improving people's lives economically. While studying population, the distribution and density of population are the basic and essential factors that are presented for study. Other characteristics of population depend on the distribution and density of population [5, 6]. Population distribution is not just the division of population but it is a process that is the result of the combined effect of various geographical factors. Therefore, the difference in population distribution and density in different regions depends on natural factors, regional economic conditions, cultural progress and historical progress. Since the study should be done from this point of view, it is appropriate to study the statistical population in this field of study.

Study Area

The absolute geographical location of the Study area can be express as 19° 35' 09" North latitude to 21° 38' 01" North latitude and 73° 14' 53" East longitude to 75° 12' 19" East longitudes. All the above factors can affect the development of various tourist centers in Nashik and Dhule district. It is bounded by Dhule district to the north, Jalgaon district to the east, Aurangabad district to the southeast, Ahmadnagar district to the south, Thane district to the southwest, Valsad and Navsari districts of Gujarat to the west.



Map.1: Location map of Study Area

Aims and Objectives of the study:

The main objective of this research is to study the population characteristics of Dhule district. Along with this, some important objectives have been set in the following form.

1. To study Population Growth, Sex Ratio, Population Density and Literacy in Dhule district. (1901- 2011 Census Periods) base on Statistical Assessment.
2. To study of Demographic Characteristic its spatial distribution [3].

MATERIAL AND METHODS

The study is mainly based on the Statistical Assessment of demographic characteristics. A variety of methods and models used to project the population changes, its distribution and causes. The present study reveals the spatial and temporal changes in the population structure of the study area. Various methods and materials are used in determining the transformation of demography of the study region. The research methods can be then summarized as follows (Chart no 1).

1. **Literature survey:** A vast amount of literature is present that explains demographic characteristics and its distribution. The first phase of this study is to find the available literature and understand the materials, methods and models that have been extensively used in the published literature.
2. **Data Collection:** The second phase of this research is the collection and compilation of database essential for this study. The population data of the study area is gathered from Census of India online platform for the years 2001 and 2011. Secondly the spatial data that includes the shape file of the study area is gathered from online GIS platform. The other database includes various websites, news, journal articles that are extensively surveyed and incorporated in the present study.
3. **Analysis of Data:** The gathered population data for each district which is a part of the study area is compiled using MS-excel and SPSS. The data for various demographic characteristics are then extracted from the huge database and analyzed using different statistical techniques.

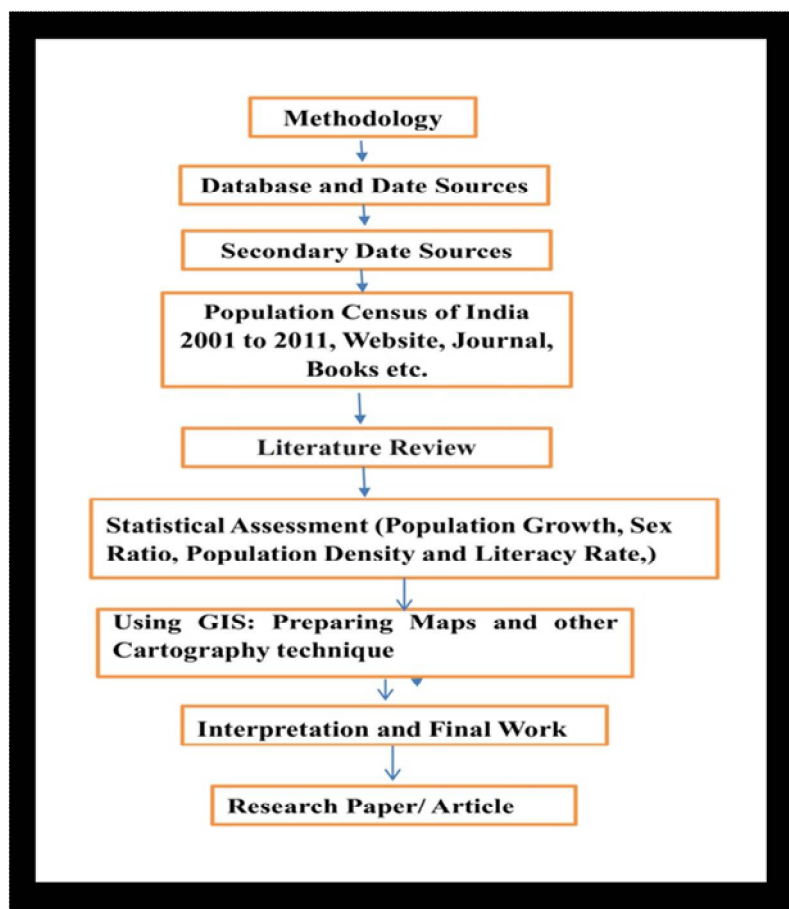


Chart no 01: Methodology of Research

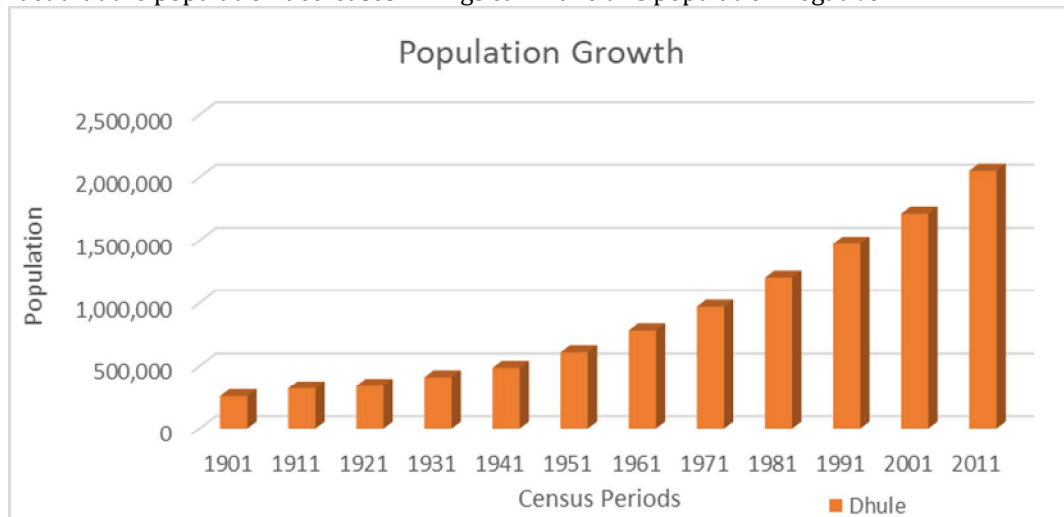
RESULT AND DISCUSSION

Population growth, population density, sex ratio, literacy have been included to study the population of Dhule district. These studies have been done from a geographical point of view.

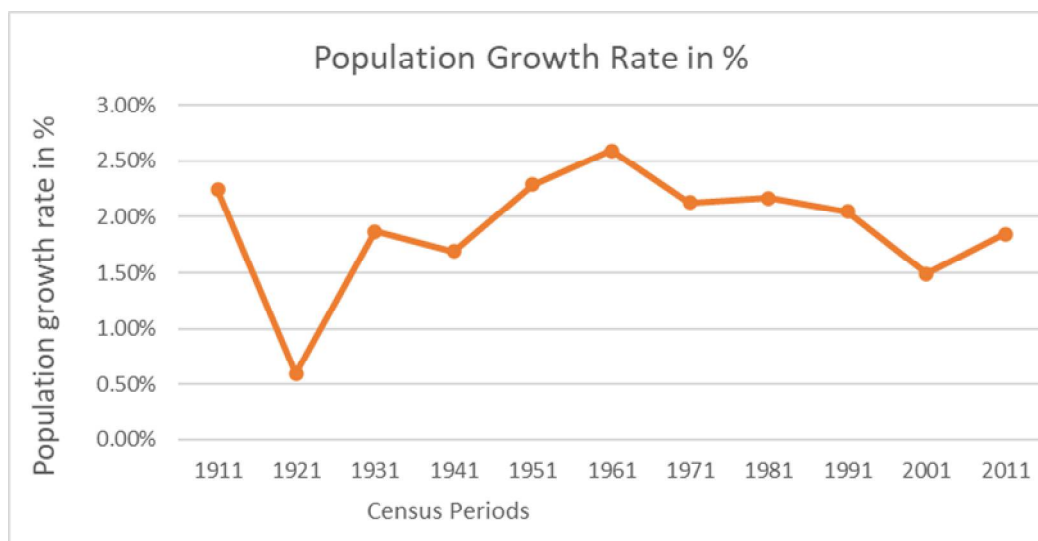
1. Population Growth:

The population of any country is as important as other natural productive factors. There is a very low correlation between population growth and economic progress. The economic progress of any country depends on the natural factors required for production and the population required to use them. If the population in a region is not sufficient, all the factors of production will not be used and the overall production will decrease to that extent. Therefore, the study of population is important in human geography. Birth rate and death rate are two natural factors that affect population growth, while migration also indirectly affects population growth. The population growth rate in Dhule district is continuously increasing, which means that the birth rate is high in Dhule district and the socio-economic geographical factors affect the birth rate. Graph no 1 and 2 shows the population growth in Dhule district from the census years 1901 to 2011. It can be seen that the population growth in Dhule district is

continuously increasing but the population growth in the census years 1921 is negative. The important reason for this is that due to the pestilence and drought in India this year, the population on the census has become negative. At the same time, the important reason for the negative population is that if the death rate is higher than the birth rate, the population becomes negative and the birth rate decreases due to the fact that the population decreases. Things can make this population negative.

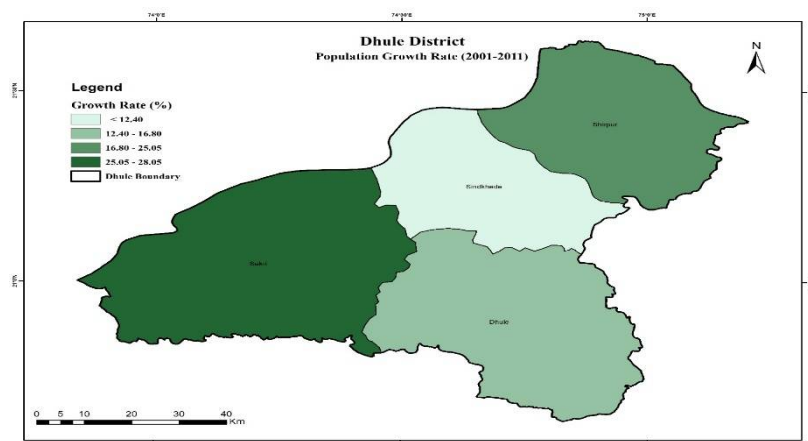


Graph no 01: Population Growth (1901-2011 Census Years)



Graph no.02: Population Growth Rate of Dhule district (1901-2011 Census Years)

Graph no 01 and Graph no.2 shows the distributional analysis of population growth. From this it can be seen that the population growth in Dhule district is generally around two percent. The highest growth rate occurs in the year 1961, while the lowest negative population growth occurs in the year 1921, with a negative growth in the year 1941 and a negative growth in the year 2001. Despite this, the population growth in Dhule district is constantly changing. In short, even though the population is increasing, the growth rate is within two percent.



Map no.2 Population Growth Rate in Dhule District (2001-2011 Census Years)

This map also shows four groups of population growth for the geographical distribution of population growth rate. Dhule district consists mainly of four tehsils of which Dhule includes Shirpur, Sakri and Shindkheda tehsils. The lowest population growth is seen in Sindkhed tehsil where population growth is less than 12 percent highest population growth is seen in sakari tehsil. This means that Sakri appears to be more socio-economically developed than other similar areas because of which the population growth is at a higher rate. This is because the literacy rate in this area is very low or economic status is not very good. The Sindkhed and Dhule districts have very low population growth rate which means that the socio-economic development of these districts is low. Due to this the people of these areas are migrating to the other places for employment. In short, the population growth in this area is controlled as the birth/death rates.

Sex ratio:

The most important reason behind this is the ratio of women to men i.e. sex ratio. The number of women per 1000 men is considered to be one of the most important factors for the development of the resort in the society. The opposite will also mean that there is a large migration out or to other places in this area. Although there is a component of human resources development, this component is influenced by the socio-economic status of the geographical situation and the social and quality or level of participation of women in various occupations.

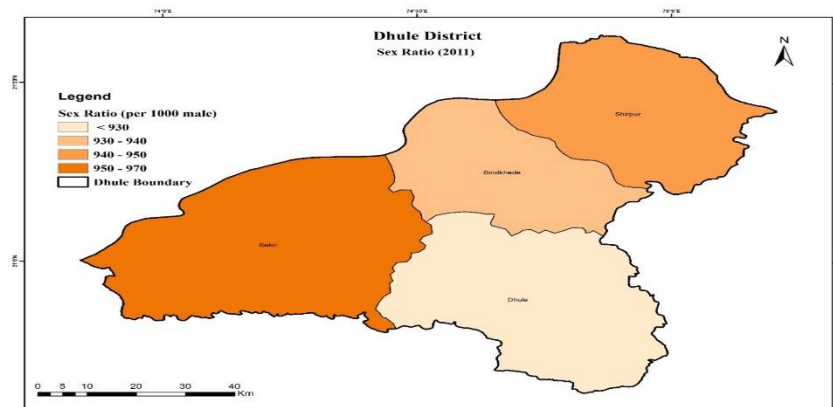
Along with different elements of population composition, Sex composition, age composition and economic composition grip a major place for population study. The separate data for males and female are important for various types of planning and for the analysis of other demographic characteristic such as nasality, mortality, migration, marital status, economic relationship within a community. Population is also significant and demographic characteristic of population study. Sex composition of a population directly influences quantity of married persons in a population and birth rate. It indirectly influences supply of labor forces. The number of male in the total population is larger than that of females so the supply of labor force is more mortality and migration. Sex ratio in requisites is number of females per thousand males. Sex ratio is one of the significant indexes of social but also economic condition of an area and important device for regional analysis, of all the demographic attributes of population the sex structure is most essential aspect of humankind. Sex ratio represents radial recognizable component of population. Sex ratio considered in same types, Primary Sex ratio is the sex ratio at the time of conception, secondary sex ratio is the ratio at the time of birth and tertiary sex ratio is the ratio found at the time of enumeration [1-3]. The sex ratio means the ratio between males and female to study the sex ratio is very important in the demography. The social economic and cultural of the region depend upon the sex ratio of that particular region. The present study aiming at analyzing human resources development has to take in to account this demographic parameter.

The data collected processed analyzed by using different Quantities statistical techniques and the table is used to analysis the data. The sex ratio of the population was calculated using the following formula below.

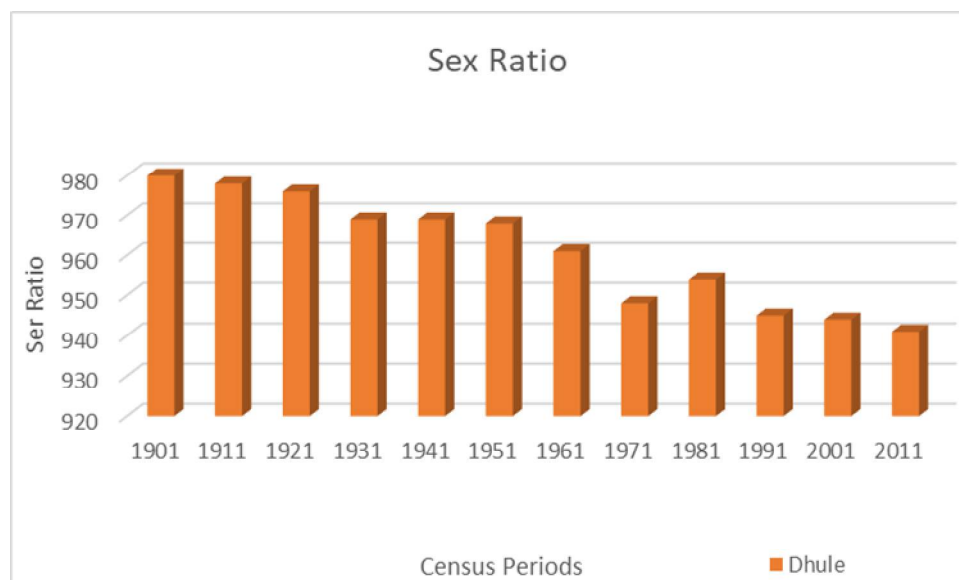
$$\text{Sex Ratio} = \frac{\text{Female Population}}{\text{Male Population}} \times 1000$$

The most important reason behind this is the ratio of women to men i.e. sex ratio. The number of women per 1000 men is considered to be one of the most important factors for the development of the resort in the society. The opposite will also mean that there is a large migration out or to other places in this area. Although there is a component of human resources development, this component is influenced by the socio-economic status of the geographical situation and the social and quality or level of participation of women in various occupations.

Dhule district mainly consists of four tehsils including Sakri, Shirpur, Shindkheda and Dhule. According to the census of 2011, the ratio in the district is less than Nashik district, mainly in Sakhri and Shirpur tehsils, the ratio of sex is high, and in Dhule district, the sex ratio is very low, it is less than sex ratio 930, while in Sindkhed tehsil, the sex ratio is 940. Dhule district has the lowest rate of sex ratio which means there is a need for social stability in these areas as well as creating awareness among the people [4, 6]. The ratio is higher in Sakri and Shirpur tehsils, which means that social stability, has been achieved here, on the contrary, there may not have been any economic development in these areas, so males in these areas may have gone for business.



Map no. 03: Sex Ratio (2011 Census Year)



Graph no 3: Sex Ratio (1901-2011 Census Years)

Population Density:

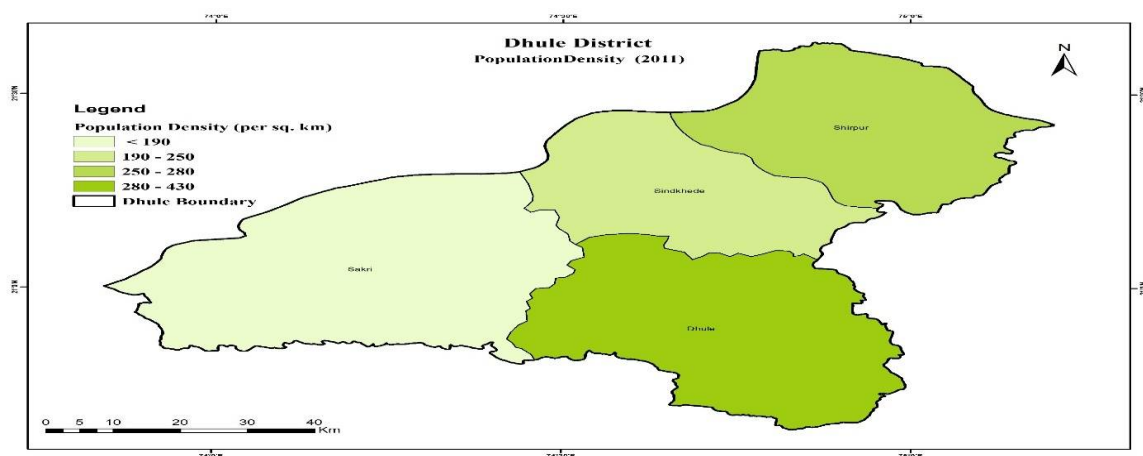
Population density is considered as population characteristics its important factor Population density is considered as the ratio of resources in a geographical situation Population density is high. A geographical area is characterized by socio-economic development, or the geographical area has a greater capacity to absorb population. Population density is the ratio of the geographical area and the population living there. It can be mainly in percentage but in a geographical situation, population is less than it is economic development is less, employment opportunities are less, agricultural development is less. Population density depends on resource endowment Geographical areas with high population density tend to use

more natural resource endowments, whereas in these geographical conditions the population is less. Population density is low as humans reduce the use of local natural resources [6-8]. The measurement of population distribution and concentration used population density and other parameters, Population density calculated in land man ratio. Calculated population density was ratio between total population and available land. The population density used following formula.

$$\text{Population Density} = \frac{\text{Total Population}}{\text{Total Geographical area}}$$

The study of density of population presents the important relationship between population and land. It is important from different persecutions separately from demographic change. The pattern and distribution of population the stage vital rote not only in evaluate the socio-economic condition of the country but also in facilities for monitoring and introducing remedial measures for the future. The mainly suitable and simple method to appreciate the distribution is the arithmetic density [9].

Population density of the Dhule district is 212 per sq. km., which is much lower than Maharashtra state's population density of 315 per sq. km. As per 2001 census, the literacy rate of Dhule district is 71.6% as against Maharashtra State literacy rate of 76.90%. The literacy rate of rural area is 67.1% and urban area is 84.5%. Sakri tehsil of Dhule district has the lowest population density which means that this tehsil lacks natural resources so that its natural resources are in less form compared to other populations. Due to this, the population density here is low, in short, the capacity of the land to hold the population is low [10-14]. In short, the development of this geographical region is less there is a lack of development of factories and various types of transport, because of which there are no employment opportunities, so people are not attracted here. Among the total tehsils in Dhule district, Dhule tehsil has the highest population density, which means that the economic status must have developed here, along with the availability of various businesses, so that resources must have been developed.



Map no 4: Population Density (2011 Census Years)

If the population density is suitable in places where natural factors are favorable, then development plans can be easily implemented in such places. It is easy to estimate how much opportunity there is for overall development. While planning a new transport route, the population density of that particular region has to be considered. Density gives an idea of whether the population of a region is more or less than the natural factors or the carrying capacity. The ratio of human and land is noticed and the excess or deficiency in it is also noticed. Population density is an indicator of the favorability and unaffordability of progress in health, business, social and economic plans [15-18]. Where the available natural resources are sufficient and the population density is also sufficient, progress is possible in places. Development is given scope in such places, but if the population density is high compared to the natural resources, the situation is conducive to migration. Thus, population density is of utmost importance.

CONCLUSION

The present study reveals spatial and temporal patterns of demographic characteristics in the Pune administrative Division. We looked that there are variation in the reported demographic characteristics

of Population Density, Sex Ratio, Rate of Urbanization and Occupational Structure in the study area. This variation is a result of geographic factors like Physiography and Climate whereas, the other factors like industrial and infrastructural development are also responsible for the uneven distribution of population and density. The occupation structure also changes with the developmental factor which sometimes led to change the sex ration in some regions. Urbanization is an important indicator of the economic development of any region and it also indicates the growth of secondary and tertiary sector. Its importance in studying population can be explained as follows. Population is studied from the perspective of studying the nature and distribution of all natural and cultural factors on earth, and it is on these factors that the study of population distribution and characteristics becomes important.

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