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A Comparative Study of Crude Density and Physiological Density of Dharashiv District

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Abstract

Population geography is mainly about the population distribution. Population distribution measured by various methods. It includes crude density, Physiological density, Agriculture density, caloric density etc. Population plays a key role in the development of the agriculture in the region. The relation between population and land use is very close. The present paper deals with mainly about crude density and physiological density. Dharashiv district crude density and physiological density pattern shows diverse in nature. Population growth directly affected on the arable land as well as Net sown area. The changes in Agriculture land use and Agriculture production in Dharashiv district adversely affected by drought condition. It is because study area comes under drought prone area of Marathwada region. There was very close relationship between whole districts total crude and total physiological density pattern.

Keywords: Crude density, Population distribution, Physiological density, Arable Land, Net sown area

Introduction

The study of any population is concerned not only with its size and characteristics but also with how it's distributed in various facial division and changes that occur in the pattern of population distribution over the year. The importance of studying population distribution by geographic areas becomes event when it is realised that small heavily populated areas exist near virtually and inhabited or sparsely inhabited areas. The irregularity of the distribution of mankind over the Earth and the difference from place to place. Crude density and psychological density are the measures of population distribution. Crude density is the total number of individuals divided by the total area. population density is also called a crude density and arithmetic density.

Crude density = Total population / Total Area

Crude density or total population divided by total area is primarily shaped by environmental, social - economic and demographic factors. Favourable climate, water access, industrialisation, urbanization, transport facilities, infrastructure, population growth migration, political stability etc. were directly affected on crude density as well as on physiological density. Physiological density the number of people per unit area of arable land is known as physiological density. Physiological density is a measure of population pressure calculating the number of people per unit area of arrival or cultivable land. It is calculated by using following formula.

Total Population

$$\text{Physiological Density} = \frac{\text{Total Population}}{\text{Five years average of net sown area}} \times 100$$

Five years average of net sown area

It indicates the relationship between total population and amount of land suitable for agriculture. The purpose of physiological density to measure how many people depend on productive land. The high physiological density shows available agriculture land is being used by more and may reach its output limit sooner than a country that has a lower physiological density. The factors affecting on physiological density and crude a density were most of the same.

Objective:

The present study is based certain specific objectives.

1. To study concept of Crude density and Physiological density.
2. To study comparison between Crude density and Physiological density of Dharashiv district.

Study Area:

Dharashiv district is located in Maharashtra state. It is located on east side of Marathwada region. The latitudinal extent of study area is 17° 35' to 18° 40' north and longitudinal extend between 75° 16' to 76° 40' east. It is situated about 600 m above mean sea level.

Manjra and Terna are major are seasonal river mainly flow in rainy season. Temple of goddess Tuljabhavani at Tuljapur is famous in Maharashtra. There are eight Tehsil in the district. The Dharashiv district comes under drought prone area. Average annual rainfall in within the district is 730mm.

Methodology and Data Collection:

The present study is covering entire Dharashiv district. as the study area. Therefore, the analysis is based on secondary data sources. It includes District Census Handbook of Dharashiv District, socio economic abstracts. The data is divided in various categories and processed. The comparative approach applied to shows tehsil wise variation in crude density and physiological density of study area.

Crude density of Dharashiv districts 1991-2011

The Dharashiv district comes under a drought prone area. Agricultural activities are adversely affected by drought condition. The water scarcity problem is a common phenomenon. The population density or crude density closely associated with social economic condition of Dharashiv district.

In 1991 Crude density pattern of Dharashiv district divided into three categories. The high crude density was observed in Dharashiv, Umarga and Kalamb tehsil with 218, 198 and 181 respectively. The moderate crude density observed in a Tuljapur tehsil with 136. Low crude density was observed in Bhum and Paranda tehsil with 128 and 120 respectively. Dharashiv district total crude density was 169. Washi and Lohara tehsil was not formed in 1991.

In 2001 crude density pattern in Dharashiv district drastically changed. All tehsils shows drastically increase of crude density. The districts total crude density in 2001 was 196. It is higher than previous decade. The high crude identity was observed in Kalamb, Lohara, Umarga and Dharashiv tehsil with 205, 206, 240 and 264 respectively. The moderate crude density was observed in Washi and Tuljapur tehsil with 152 and 158 respectively. The low crude a density was recorded in Paranda and boom with 133 and 142 respectively. In the year 2001 crude a density first time increases above 250.

In the year 2011, crude density increasing all tehsils except Washi tehsil. Washi tehsil recorded 147 crude densities in 2011 compare to 152 in 2001. It is the only tehsil shows negative growth rate. The Dharashiv district total crude density was 214 in 2011. It is higher than previous two decades. The high crude a density was recorded in Omega and

Dharashiv tehsil with 268 and 307 respectively. Crude density was crossed over 300 in 2011.

The moderate crude a density was observed in Lohara and Kalamb tehsil with 218 and 237 respectively. The law crude density was recorded in Washi, Paranda, Bhum and Tuljapur tehsil with 147, 149, 166 and 180 respectively. The general trend of corrode density pattern shows increasing continuously from 1991 to 2011 except washi tehsil in 2001.

Physiological Density of Dharashiv district 1991 to 2011

Dharashiv is a less developed agriculture district. It is due to the drought condition of the area. Physiological density shows relationship between the total arrival land (agriculture land) population pressures. The agricultural production is the result of population pressure of the area. Physiological density was different in all the tehsil of study area. Physiological density pattern categorised again and three categories. The high moderate and low category. These categories are based on value of a particular decade. In 1991 the high physiological density was observed in Dharashiv tehsil with 234. The moderate physiological density was recorded in kalamb and Tuljapur tehsil with 176 and 182. The law

Physiological density registered in Paranda, Umarga and Bhum with 109, 130 and 143 respectively. The districts total physiological density was 190 in 1991. It is higher than crude density of 1991.

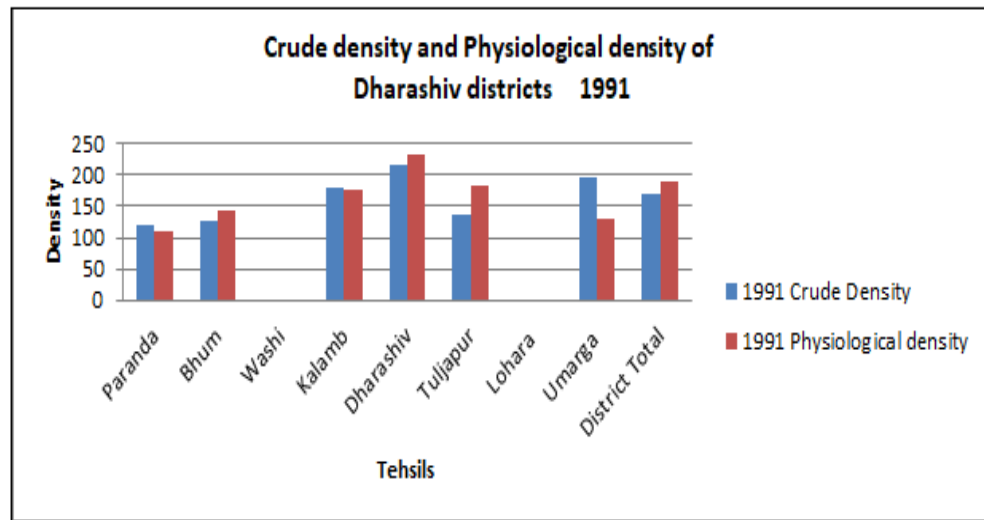
Table 1.1 Crude density and Physiological density of Dharashiv districts 1991-2011

Tahsil	Area in Sq.km	1991		2001		2011	
		Crude Density	Physiological density	Crude Density	Physiological density	Crude Density	Physiological density
Paranda	940.5	120	109	133	131	149	115
Bhum	825.6	128	143	142	189	166	199
Washi	627	-	-	152	132	147	193
Kalamb	917.2	181	176	205	227	237	116
Dharashiv	1,359.10	218	234	264	310	307	331
Tuljapur	1,584.80	136	182	158	222	180	246
Lohara	535	-	-	206	234	218	237
Umarga	1,005.80	198	130	240	184	268	267
District Total	7,569.00	169	190	196	207	214	204

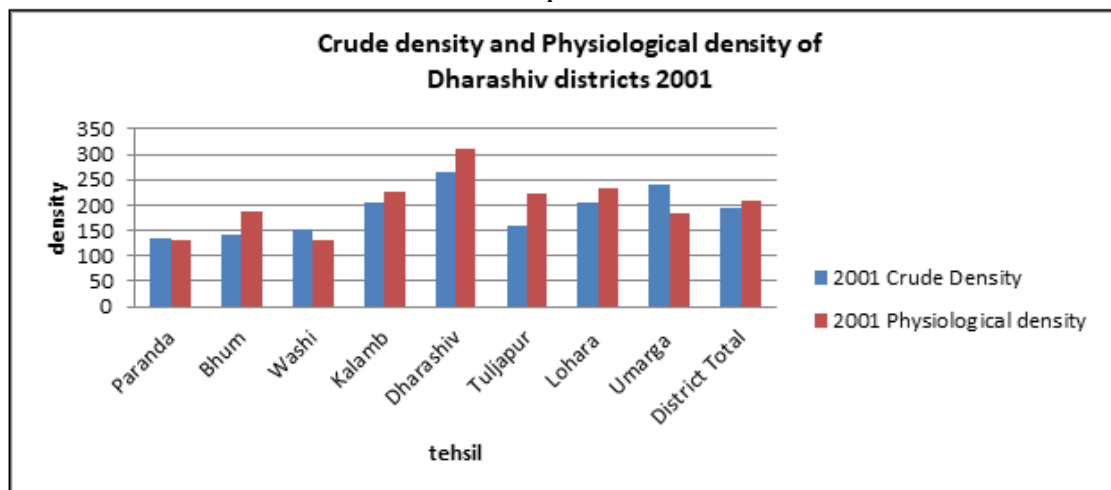
Source: Socio economic Abstract of Dharashiv District (computed by researcher)

In 2001 physiological density pattern of Dharashiv district shows increasing trend in all the tehsil with high growth rate. The high physiological density was recorded in Tuljapur, Kalamb, Lohara and Dharashiv tehsil with 222, 227, 234 and 310 respectively. The moderate density was observed in Omega and Bhum tehsil with 184

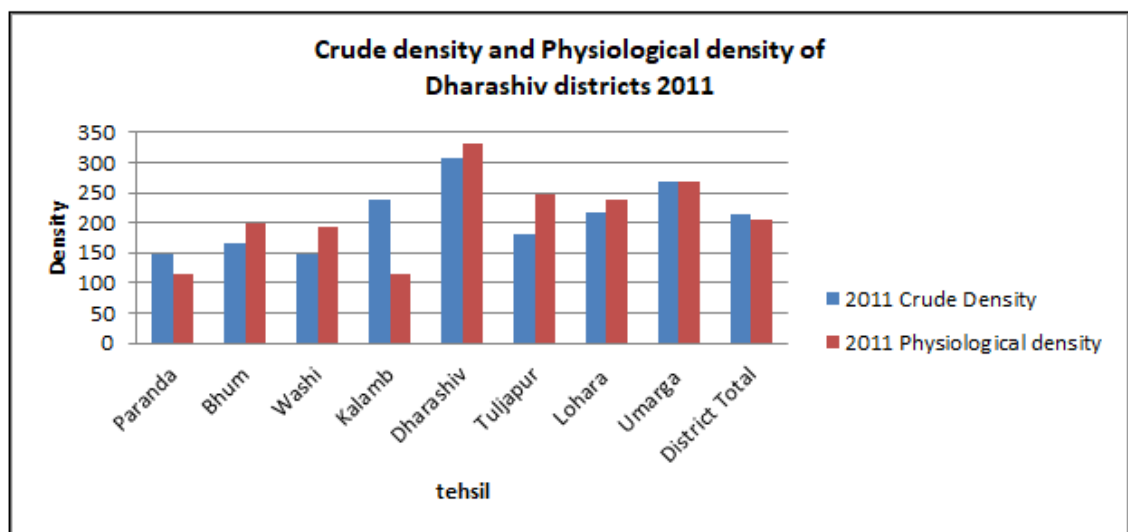
and 189 respectively. Low physiological density was observed in Paranda and Washi tehsil with 131 and 132 respectively. The districts total physiological density was 207. It is higher than previous decade. The physiological density first time crossed above 300 in Dharashiv tehsil.



Graph 1.1



Graph 1.2



Graph 1.3

In the year 2011 physiological density pattern shows drastic changes in the whole district. 11 the high physiological density was observed in Lohara, Tuljapur, Umarga and Dharashiv tehsil with 237, 246, 267 and 331 respectively. The moderate physiological density was recorded in Washi and Bhum tehsil with 193 and 199 respectively. The low physiological density was registered in Paranda and kalambe tehsil with 115 and 116 respectively. Both these tehsils registered negative growth rate compared to 2001. It is because of increase of agricultural land. A slight change was recorded in Lohara tehsil compared to 2001. The increasing trend of physiological density in 2011 in remaining tehsils observed because of increasing population compared to agriculture area. The district's total physiological density was 204. It is lower than 2001 and higher than 1991.

Conclusion

The present study is focused on comparative study of crude density and physiological density of Dharashiv District. The crude and physiological density pattern in Dharashiv district shows variation in all the tehsil. Overall the present study concluded the major observation including the tehsil wise analysis.

1. The positive growth rate registered in crude and physiological density of Dharashiv district in the year 1991 to 2001.
2. Crude and physiological density closely associated with each other.
3. There was big difference between high and low crude and physiological density in tehsil wise.
4. The negative growth rate of the road in physiological density pattern in 2011.
5. There was very close relationship between district's total crude and total physiological density pattern.
6. The increasing trend of physiological density in 2011 in remaining tehsils observed because of increasing population compared to agriculture area.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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