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Spatio-Temporal Distribution of Population Density in Frontier between Andhra Pradesh, Karnataka and Nanded District of Maharashtra

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Abstract:

Distributions of population in an area constitute an important segment of population studies. While distribution, the concepts are quite interrelated and used simultaneously. Distribution of population refers to the way people are spaced over the land; it emphasizes the pattern of actual place location of a population. Distribution of population measures the degree of population concentration or dispersion. On the other hand density of population is most revealing and is useful tool in the analysis of diversity of man’s distribution in space. It is a simple concept of relating population size to the land area with a view to assessing the pressure of population upon the resource of area. It is generally expressed in terms of person per sq. km or per sq. mile of land area rather than of gross area. Density of population per unit of area represents the ratio of population to land (Desai, 1985).

According to 2011, census arithmetic density of the Nanded district was 319 persons per sq.km. This is significantly lower than that of Maharashtra in the same year which was 365 persons per sq.km or less than that of India, which was 382 persons per sq.km. The density of population for the study region has been lower than that for Maharashtra as well as for India since 1951. In the decade of 1951 density of the study area increases, it is mainly due to low mortality rates caused by plague epidemic.

Key words: Density, Distribution, Population, Spatial, Temporal

Introduction:

The density of population is expressed in various ways to understand the relationship between population and resources. These ratios have been designated as arithmetic density, physiological density, geographical density and caloric density. Arithmetic density is a ratio between total area and total population. However, it cannot be used as a measure of population pressure on land because it merely gives a simple quantitative relationship between man and land.

Physiological density is more refined method of calculating ratio of population to land. It is a ratio between total population and total cultivated or cropped area. It is expressed in terms of number of persons per sq. km. or mile of cultivated area. Another measure of land ratio devised is agricultural density. In this measure only agricultural population is correlated with the total area under cultivation. It is expressed as agricultural population per sq. km. or miles of the cultivated area. Caloric density is an elaboration of agricultural density. It is calculated considering total rural population and total food cropped area.

Study Region:

Nanded district lies in the Godavari basin and the eastern most district of Maharashtra. It has a population 33,61,292 as per 2011 census. It is situated on the northern bank of the godavari and has grown in importance as a commercial center. Nanded district covers an area of 10528.00 km². In terms of area and population it forms 3.42 Percent and 2.55 percent of the state respectively.
Objectives:
1. To study the temporal changes in density
2. To study the spatial changes in density

Database and Methodology:

The attempts have been made by the researcher to examine population structure during the 30 years spreading between 1991 to 2011, for which uniform data at circle level is available. The main body of data used in this study was collected from two sources viz. primary and secondary.

The present paper includes distribution, density of population in the study region. It has been carried out over thirty years from 1991 to 2011. The processed data was presented in the form of maps, diagrams and tables. Population concentration is calculated in relation to percentage of population and area. The number of persons per sq.km or mile is known as arithmetic or general density. It is known as general condition for population pressure. It is calculated by the following formula:

\[
\text{Arithmetic Density} = \frac{\text{Total Population}}{\text{Total Area}}
\]

Arithmetic density is closely related to population growth and area of particular location. Whenever population growth is noticed in only area arithmetic density also increases. If area of only location gets changes, it may decline or increase it affects on the values of densities. If area declines densities finds increase or if area increases density gets decline.


Table No. 1.1: Temporal Variations in Density of Population (1951-2011)

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</table>

According to 2011, census arithmetic density of the frontier between Andhra Pradesh, Karnataka and Nanded district of Maharashtra that is Nanded, Adilabad, Nizamabad, Bidar, Andhra Pradesh, Karnataka, Maharashtra and India was 319, 170, 321, 312, 303, 319, 365 and 382 persons per sq.km. respectively. This is significantly lower than that of Maharashtra in the same year which was 365 persons per sq.km or less than that of India, which was 382 persons per sq.km. The density of population for the study region has been lower than that for Maharashtra as well as for India since 1951. In the decade of 1951 density of the study area increases, it is mainly due to low mortality rates caused by plague epidemic. As per 1961, Nanded district crossed the figure of one hundred and reached to 103 persons per sq.km. and 1971, Nanded district crossed the figure of one hundred and reached to 133 persons per sq.km. Fast growth in density of population is noticed during the decade 1991-2011. According to 1991 census, density of the study area was 222 person per sq.km. Arithmetic density of the study area remains lower during the period of seventy years.

Spatial Variations in Density of Population:

Table No. 1.2 is showing the spatial variations in the density of population of the study area since 1991-2011. Density of the frontier between study areas is categorized into three sections. 1. Density below 250 persons per sq.km. This is a lower density region. 2. Density between 250-300 persons per sq.km. This is moderate density area and 3. Above 300 people per sq.km. This is high density area of the study area.

According to 2011 census, density of frontier area of Above 300 persons per sq.km. was found in Degloor, Biloli, Dharmanabad, Ranjal, Bodhan and Kotgir i.e. 332, 308, 317, 342, 494 and 308 persons per sq.km. respectively whereas 250 to 300 persons per sq.km. density was noticed in
Mukhed, Navipet and Madnoor tahsils of the study region. Bhokar, Himayatnagar, Umari, Kinvat, Tamsi, Talamadugu, Bazarhatnoor, Boath, Sarangpur, Kuntala, Kubeer, Tanoor, Mudhole, Jukkal and Aurad was recorded below 250 persons per sq.km. density.

According to 2001 census, highest density of the study area was found in Bodhan (454) tahsil whereas medium density was noticed in Degloor, Biloli, Dharmabad, Navipet, Ranjal and Kotgir tahsils of the study area. Low density was observed in Mukhed, Bhokar, Himayatnagar, Umari, Kinwat, Tamsi, Talamadugu, Bazarhatnoor, Boath, Sarangpur, Kuntala, Kubeer, Tanoor, Mudhole, Madnoor, Jukkal and Aurad tahsils of the study region.

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</table>


Conclusions:

In 1961, frontierarea of the study region Nanded, Nizamabad, Bidar, Andhra Pradesh, Karnataka and Maharashtra crossed the figure of three hundred and reached to 365 persons per sq.km. and 1971, there is only one adilabad districtnothing crossed the figure of one hundred and reached to 80 persons per sq.km. Fast growth in density of population is noticed during the decade 1991-2011. Density of Bodhan tahsil is increased very fast, it may be largely due to changing economic paradigm i.e. industrial activities and consequent urbanization.

References: