



SPATIO-TEMPORAL ANALYSIS OF DENSITY OF URBAN POPULATION IN NAGPUR DISTRICT OF MAHARASHTRA STATE

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Abstract

While studying the population of any region, it is possible to study the density of the population along with distribution, because the distribution of population in any region does not provide information in the right and meaningful way. In order to know the proper relationship of land and population, it is important to know the area of the region and the ratio of the population. Because the area of any region and the ratio of the population is generally considered to be the density of the population. The density of the population displays the pressure or load of the population in that region. Present research is an attempt the spatio-temporal analysis of density of urban population in Nagpur district of Maharashtra state.

Keywords: Urban Population, Density, Per Sq.Km., Male, Female

Introduction

In the density of the urban population in Nagpur district, there is a diversity of time-wise and intensive diversity. The density of the urban population in this region and the density of the feminine population have been conducted in the research presented in the research.

Objectives of the Study

The main objectives of the present study are as follows,

- 1) To study the density of total urban population in Nagpur district.
- 2) To study the comparative study of urban male and female population in Nagpur district.

Data Source and Methodology

Present investigation is based on the secondary source of data. Data is collected from District Census Handbook, 1991, 2001 and 2011 respectively.



The analysis is based on the census year 1991, 2001 and 2011 data. The density of urban population is calculated with the help of following formula,

$$UD = \frac{UP}{UA}$$

UD – Density of Urban Population

UP – Urban Population

UA – Urban Area

The urban population density is calculated for the total population as well as the male and female population. The density calculated using the formula is presented in a table and its distribution is shown in a map.

Study Area

The intriguing expansion of the district is 20°35'09" north to 21° 44'15" the northern latitude, and 78°15' 05" east to 79°40'36" east longitude. The total geographical area of this district is about 9892 sq km. The geographical area of Nagpur district is only 3.22% compared to the total geographical area of the state, while in some parts of this district, the minimum height above sea level is 274 meters and the maximum height in some areas is 652 meters. During the year 2011, the total population of the district is about 3287139, out of which the male population is 1710404 (52.03%) and the number of women is 1576735 (47.97%).

Nagpur District - Urban population density (1991)

When the density of the urban population in Nagpur district was studied, the density of the urban population in the district during 1991 is found to be 5569 at 4 km. Also, the density of urban men in this district is 2908 to 2908 and the density of urban women is 2661 at 2661. Nevertheless, due to the variety of tehsil-wise in the density of the urban population, it is also possible to study the density of the urban population in Nagpur district as well as the density of the urban woman and the density of the population of the city.

Table No. 1**Nagpur District - Density of the Urban Population (1991)****(Density in Per Sq.Km.)**

Tehsil	Total	Male	Female
Narkhed	4845	2492	2353
Katol	2638	1380	1259
Kalmeshwar	1189	616	573
Savner	3535	1863	1672
Parshivani	2124	1131	994
Ramtek	1411	734	677
Mauda	0	0	0
Kamptee	3452	1798	1653
Nagpur Rural	3013	1620	1394
Nagpur Urban	7481	3900	3581
Hingana	3967	2287	1680
Umred	3475	1806	1669
Kuhi	0	0	0
Bhiwapur	0	0	0
Total District	5569	2908	2661

Source – Calculated by Author

Observing the above table, it appears that the highest density of the urban population in 1991 (more than 6000 per four km) is in the Nagpur (urban) tehsil and the density of this tehsil is 7481. Also, the density of the urban male population in this tehsil is 3900 per sq km and the density of urban women is 3581. That is, the highest urbanization in this tehsil is the highest of the urban population in other tehsils of the district.

In the study of the urban population of the urban population (between 3000 to 6000), the medium of the urban population of the study region (between 3000 to 6000) was studied, in 1991, Nagpur (Rural) (3013), Kamthi (3452), Umred (3535), Sawner (3535), Hingana (3967) and Narkhed (4845). Also, it seems that the density of the



feminine population in these 06 tehsils seems to be between about 1620 and 2492 every four km and the density of urban women is found between 1393 and 2353.

The tehsils of the urban population of the urban population in Nagpur district (less than 3000 per sq km) seem to have been studied that Katol (2638), Parsivani (2124), Ramtek (1411) and Kalmeshwar (1189) are found to have medium density of urban population. The density of urban women (per sq km) is found between 573 and 1259.

Overall, Nagpur district is the highest in Nagpur (urban) tehsil in 1991 in 1991 and the lowest is the lowest in Kalmeshwar tehsil. Also, during this period, there is no urbanization in 03 tehsils of Mauda, Kuhi and Bhiwapur of the study region.

Nagpur District - Urban Population Density (2001)

In Nagpur district, the density of the urban population is 7168 per sq km during 2001, the density of urban men in this district is 3712 and the density of urban women is found at 3455. That is, the density of urban population in 2001 compared to 1991 has increased in the region. It is observed that there is a variety of tehsils in the density of the urban population in the district as well as the density of urban men and women. Along with the density of the tehsil-wise urban population in the district, the density of the urban woman and the population is shown in Table No. 2

Table No. 2

Nagpur District -Density of Urban Population (2001)

(Density in Per Sq.Km.)

Tehsil	Total	Male	Female
Narkhed	5377	2762	2615
Katol	3613	1863	1750
Kalmeshwar	1507	780	727
Savner	3886	2014	1871
Parshivani	2759	1437	1322
Ramtek	1694	864	830
Mauda	0	0	0
Kamptee	3941	2054	1886
Nagpur Rural	8429	4480	3949



Tehsil	Total	Male	Female
Nagpur Urban	9449	4880	4569
Hingana	15885	8781	7105
Umred	3954	2030	1924
Kuhi	0	0	0
Bhiwapur	0	0	0
Total District	7168	3712	3455

Source – Calculated by Author

The above table reveals density in census 2001 which is the highest density of urban population (more than 6000 per sq km) i.e. Nagpur (8429), Nagpur (9449) (9449), Nagpur (9449), and Hingana (15885) in the study region, The density of urban men in these 03 tehsils is found between 4480 and 8781, while the density of urban women is found between 3949 and 4569. It is clear that in these 03 tehsils, the density of urban women is less than the urban men.

Due to the rapid urbanization in 2001 in Nagpur district, the number of tehsils with the medium density of urban population (from 3000 to 6000 per sq km) has decreased and in 1991, the density of Hinga and Nagpur (Rural) appears to be included in the high category density. In 2001, Katol (3613), Sawner (3886), Kamthi (3941) Umred (3954) and Narkhed (5377) are found to have a medium density of urban population. So the density of urban men in these 05 tehsils is found between 1863 and 2762, while the density of urban women is found between 1750 and 2615.

In the presented region, low density of urban population (less than 3000 per sq km) is found in 03 tehsils of Kalmeshwar (1507), Ramtek (1694) and Parsivani (2759). That is, in 1991, some tehsils of the category in the density region of this category increased in 2001 due to the increase in the category of high and middle class urban population. Therefore, in only 03 tehsils, the urban population in 2001 is less density than 1991. In these 03 tehsils, the density of the population of the urban male and female population (per sq km) was found, the density of the men here is in between 780 to 1437 and the density of women is found between 727 and 1322. In the study region, like 1991 in Mauda, Kuhi Bhiwapur tehsil, there is no density of urban population in 2001.



Nagpur District - Urban Population Density (2011)

In Nagpur district, the density of urban population is increasing steadily during 1991, 2001, and this increase is also seen in 2011. In 2011, the density of the urban population in 2011 was about 6582, and during this period, the density of urban men here is 3368 and the density of urban women is found at 3214. Along with the density of the tehsil-wise urban population in the region, the density of the urban woman and the population is shown in Table No. 3

Table No. 3

Nagpur District -Density of Urban Population (2011)

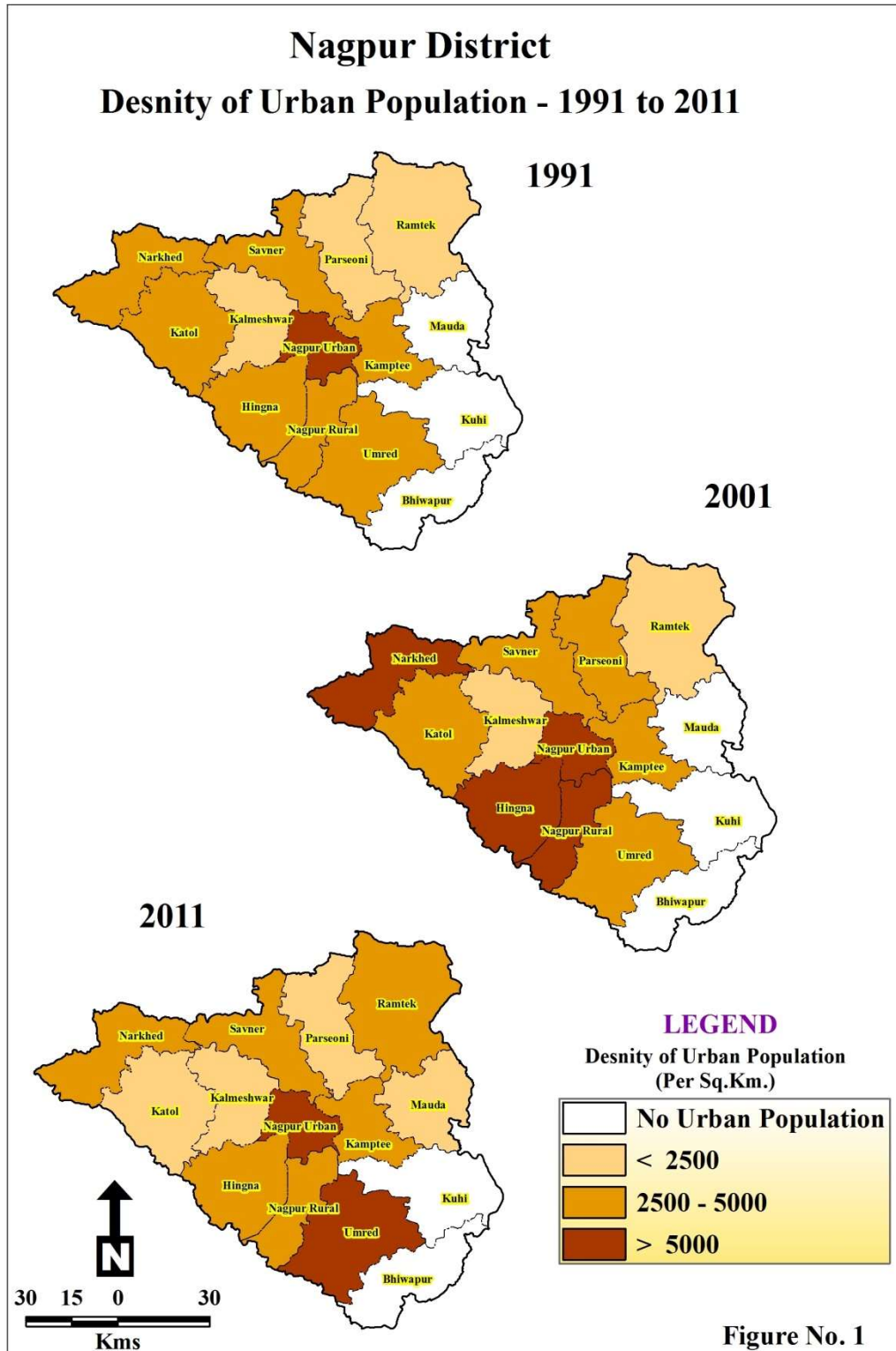
(Density in Per Sq.Km.)

Tehsil	Total	Male	Female
Narkhed	2818	1437	1381
Katol	2192	1118	1074
Kalmeshwar	1601	823	778
Savner	3767	1947	1820
Parshivani	1887	968	919
Ramtek	2559	1292	1267
Mauda	1118	579	539
Kamptee	3844	1990	1854
Nagpur Rural	3126	1624	1502
Nagpur Urban	11057	5632	5425
Hingana	2880	1552	1329
Umred	7009	3566	3444
Kuhi	0	0	0
Bhiwapur	0	0	0
Total District	6582	3368	3214

Source – Calculated by Author

In the study of the above table, in 2011, the density of urban population is found in other tehsils of Nagpur (Urban) (11057) (11057) and Umred (7009) in 02 tehsils of other tehsils (more than 6000 per sq km). Also, the density of the male population in these 02 tehsils appears to be 5632 and 3566 respectively, while the density of urban women is found at 5425 and 3444 respectively. That is, the density of the urban

population is increased in Nagpur (Urban) and Umred tehsil. Nevertheless, in 2011, the number of tehsils with the highest density of urban population in 2011 has decreased.





In the study region, there are only 03 tehsils with medium density of urban population (from 3000 to 6000 per sq km), and in 2011, the number of tehsils in these categories is reduced in 2011. The density of the urban population in Nagpur (Rural), Sawner and Kamthi tehsils is moderate and is found in 3126, 3767 and 3844 respectively. The density of the male population in these 03 tehsils appears to be between 1624 and 1990, while the density of urban women (per square km) is found between 1502 and 1854.

Mauda (1118) in Nagpur district, Kalmeshwar (1601), Parshivani (1887), Katol (2192), Ramtek (2559), Narkhed (2818) and Hingana (2880) are low density of urban population (less than 3000 per square). That is, the number of these tehsils appears to increase in 2011 compared to 2001. Also, the density of the male population in these 07 tehsils (sq km) seems to be between 579 and 1572, while the density of urban women (sq km) is found between 539 and 1329. But in Kuhi and Bhiwapur tehsils in the study area, 1991 and 2001, there is no density of urban population in 2011.

Conclusions and Remedies

Nagpur district is a developed district in Maharashtra as well as in Vidarbha and is the location of the deputy capital of the state. Since Nagpur has been a developed place in Vidarbha since ancient times, Nagpur is a place of attraction for most of the people of Vidarbha. In recent times, due to the emphasis on the all-round development of Nagpur, this district has seen the most development compared to other districts in Vidarbha. Therefore, since urbanization has gained momentum in the past few years, it is observed that the urban population in the district has been steadily increasing over time. Therefore, the population density is higher in the limited area of the district, i.e., in the urbanized tehsils. Whereas, in the regions where the pace of urbanization is low, the urban population density is seen to be low. Also, there are some tehsils, Biwapur, Kuhi and Mauda in the study region where there is no urban population due to lack of urbanization.

Overall, in Nagpur district, the density of urban population has increased in 2001 in 2001, but it is noticed in 2011 compared to 2001. Also, in all the tehsils of the study region, from 1991 to 2011, the density of urban women is less than the density of urban



men. Nagpur Urban Tehsil has the highest urban population density. All service facilities are developed in this tehsil. If the main service facilities are developed in other urban places, it will help in reducing the excess density in Nagpur Urban tehsil.

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