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Spatial and temporal change in distribution of urban population according to hierarchy of urban centres in Jalgaon district (MS)

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Abstract

Geographers use the term urbanization more commonly to refer the process of transformation. The process of transform includes behavioural, structural and demographic aspects. This study includes only demographic aspect of process of urbanization. Most part of Jalgaon district comprises the basin of river Tapi and its tributaries. Agriculture is the main economic activity which is unfavourable for faster urbanization. The district is not much developed in respect of industrial activities.

The study of spatial and temporal change in distribution of urban population according to hierarchy of urban centres in the district suggests increase in number of urban centres during the last decade. The centres placed of first hierarchical order of urbanization have suggested no change in their number while decline is noticed in percentage of population occupied by these centres. The increase is noticed in both the aspects in towns located on second and third hierarchical orders. Total population and its proportion to total urban population has decline in towns placed on fourth and fifth order urban centres.

Keywords: Jalgaon, Spatial, Temporal, Urbanization, Hierarchy

1. Introduction

Population Geography is an important branch of Human Geography. Until quite recently the systematic study of population had been largely neglected by geographers. However, in recent years there has been growing awareness of the importance of population studies within the broad framework of Human Geography. (G.T. Trewartha). Several aspects of population composition like literacy rate, fertility and death rate, urbanization, sex ratio, age structure, working and non-working population, percentage of employed and unemployed population etc are studied in population geography. All these aspects together determine the economic status of the country.

Urbanization more commonly refer to a process of transformation of a rural settlement into a urban one. 'A distinction should be made between the three aspects of the process of urbanization, i.e., behavioural, structural and demographic aspects of urbanization process. The behavioural aspect of urbanization refers to the experience of elders through time and to the change in the pattern of their behavior. The structural aspect of the process refers to the changes in the economic structure of the economic activities of the whole population. The demographic aspect refers to the process of population concentration.' (Lampard, 1965) ^[6] The present study deals with the demographic aspect of urban population. It tries to access the spatio-temporal change in population concentration of urban centres according to their hierarchical orders during the last decade.

2. Objectives

The present study is undertaken by keeping the following objectives.

1. To place the urban centres of Jalgaon district according to their hierarchical orders.
2. To calculate the growth of urban population during the last decade.
3. To understand the spatial and temporal change in population of urban centres according to their hierarchical orders.

3. Database and Methodology

The present research paper is mainly based on secondary data of urban population. The demographic aspects of the region are collected from the Census handbooks of 1991, 2001 and 2011. In order to comprehensive analysis of demographic characteristics, towns have divided into six classes by population of class-I (1,00,000 percent and above), class-II (50,000 to 99,999 percent), class-III (20,000 to 49,999 percent), class-IV (10,000 to 19,999 percent), class-V (5,000 to 9,999 percent) and class-VI less than 5,000 population as per Census 2011. To calculate spatio-temporal changes occurred in urban population, the difference between 2001 and 2011 is calculated. The percentage difference is calculated taking 2001 values as base. It is as follows;

$$\text{Spatio – temporal Change} = \frac{P2 - P1}{P1} \times 100$$

Where,

P1 = Urban Population of 2001, and

P2 = Urban Population of 2011.

The results thus obtained are explained thoroughly with the help of maps and charts.

The Study Region

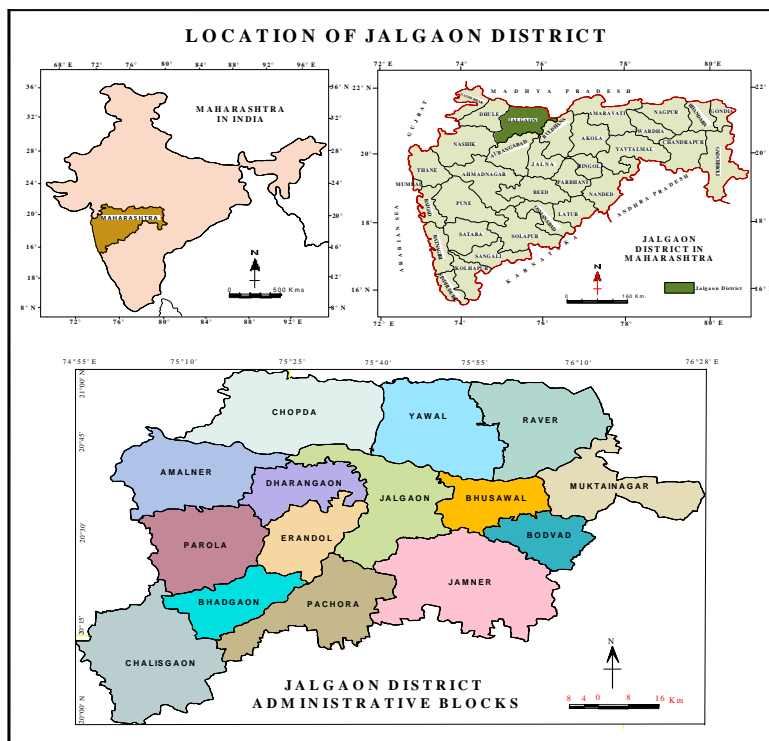
The district under study is flanked by the Satpura ranges to the north and Ajanta hills to the south and the central part of the district is covered by well-known Tapi river basin which flows towards the west. The region experiences slightly different climate than by rest of the state of Maharashtra, since it is located away from the coast but at much lower altitude that the rest of the plateau of Maharashtra. The location away from the coast has resulted in high range of mean daily temperature which is slightly than 15 °C. Low altitude has resulted in abnormally high maximum summer temperature which is normally above 40 °C.

The district is bounded by the state of Madhya Pradesh to the north. The rivers Anner and Panjhara form a boundary in the west between the region and the Dhule district. In the east, the district under study is bordered by Buldhana district. To the south, Satmala, Ajanta and Chandor hills form a natural boundary between the study region and the districts of Nasik and Aurangabad. The Jalgaon district which is one of the 34 districts of Maharashtra lies between 20° N and 21° N latitudes and 74° 55' E and 76° 28' E longitudes. The total area of the district is 11765.0 sq. Km. According to 2011 Census, the total population of the region was 42, 29, 917. The proportion of urban population to total population in the district is 31.74 percent. This urban population resides in 01 city with Municipal Corporation, 14 Municipal towns and 05 Census towns.

4. Discussion

In 2001, there were 15 urban centres in the district which has increased up to 19 urban centres in the year 2011. It suggests increase of 04 urban centres during the last decade. These 04 urban centres are Varangaon, Bhadgaon, Takali Pr. Chalisgaon and Jamner. Tehsilwise distribution of urban centres is uneven. Most of the tehsils have only one urban centre while few tehsils have more than one urban centre. Bhusawal tehsil had 03 urban centres (Bhusawal, Nimbhora Bk. and Kandari) in 2001. Now in 2001 with addition of Varangaon town it accounts 04 urban centres. Yawal and Raver tehsils had 02 urban centres each which is continued in the year 2011. All remaining tehsils had one urban centre each. Chalisgaon tehsil with addition of Takali Pr. Chalisgaon accounts for two urban centers. Pachora tehsil has another urban centres (census town) known as Pachora rural. But its population is recorded only 211.

Availability of transportation facilities, development of industries, trade and commerce etc. factors have greatly influence distribution and growth of urban centre in the study region.



Map No.1

The broad gauge railway routes of Central and Western railway have favoured the growth of cities like Bhusawal, Jalgaon, Amalner, Dharangaon, Chalisgaon and Pachora. Growth of Bhusawal, Jalgaon, Erandol and Parola is also influenced by Asian Highway No. 46. Development of industries, trade and commerce has greatly accelerated the rapid growth and development of Jalgaon and Bhusawal cities.

In the year 2001, the highest urban populated urban centre was Jalgaon with population 3,68,618 which was followed by Bhusawal town (1,72,372). Amalner and Chalisgaon towns were population about 91 thousand while Chopda town had its population about 60 thousand which was followed by Pachora (45,333). Yawal, Erandol, Dharangaon and Parola urban centres had their population between 30 and 35 thousand. Faizpur, Savada, Raver, Kandari and Nimbhora Bk. towns were their population less than 30 thousand. Nimbhora Bk. was the least populated urban centre in 2001 with population only 8,448 persons. In 2011, the population of Jalgaon city is recorded more than 4,60,000 while Bhusawal town has its population about 1,87,000. Amalner and Chalisgaon towns have their population between 95 and 98 thousand. It is followed by Chopda town (72,783). Jamner and Pachora town have their population between 45 and 60 thousand. Yawal, Varangaon, Dharangaon, Erandol, Parola and Bhadgaon are medium sized towns with population between 30 and 40 thousand.

The population size is between 15 and 30 thousand for Faizpur, Savada, Raver and Kandari towns. Nimbhora Bk. town is the least populated again in 2011 Census year.

The figure No.2 displays the distribution of urban centres according to the size of population in 2001, In Class-I, Jalgaon and Bhusawal urban places were observed in Jalgaon and Bhusawal tehsils. In class-II Amalner, Chalisgaon and Chopda urban places were observed. The highest number of urban places were observed 7 in class-III namely Yawal, Faizpur, Raver, Erandol, Dharangaon, Parola and Pachora. Kandari and Savada towns were found in Class-IV having population in between 20,000 to 49,999 from Bhusawal and Raver tehsils and one urban place, Nimbhora Bk. from Bhusawal tehsil was identified in class-V having urban population 5000 – 9,999. In 2001, Jalgaon and Bhusawal urban centres again are enjoying the status of class-I cities with higher urban population. Chalisgaon, Amalner, Pachora and Chopda towns are found on the hierarchy of class-II. The highest number of urban places (10) re observed in class-III having population in between 20,000 to 49,999. These places are Jamner, Parola, Bhadgaon, Yawal, Dharangaon, Varangaon, Erandol, Raver, Faizpur and Savada. Two urban places, namely, Kandari from Bhusawal tehsil and Takali Pr. Chalisgaon from Chalisgaon tehsil belong to class-IV having 10,000 to 19,999 population. Nimbhora Bk. from Bhusawal tehsil is identified in class-V.

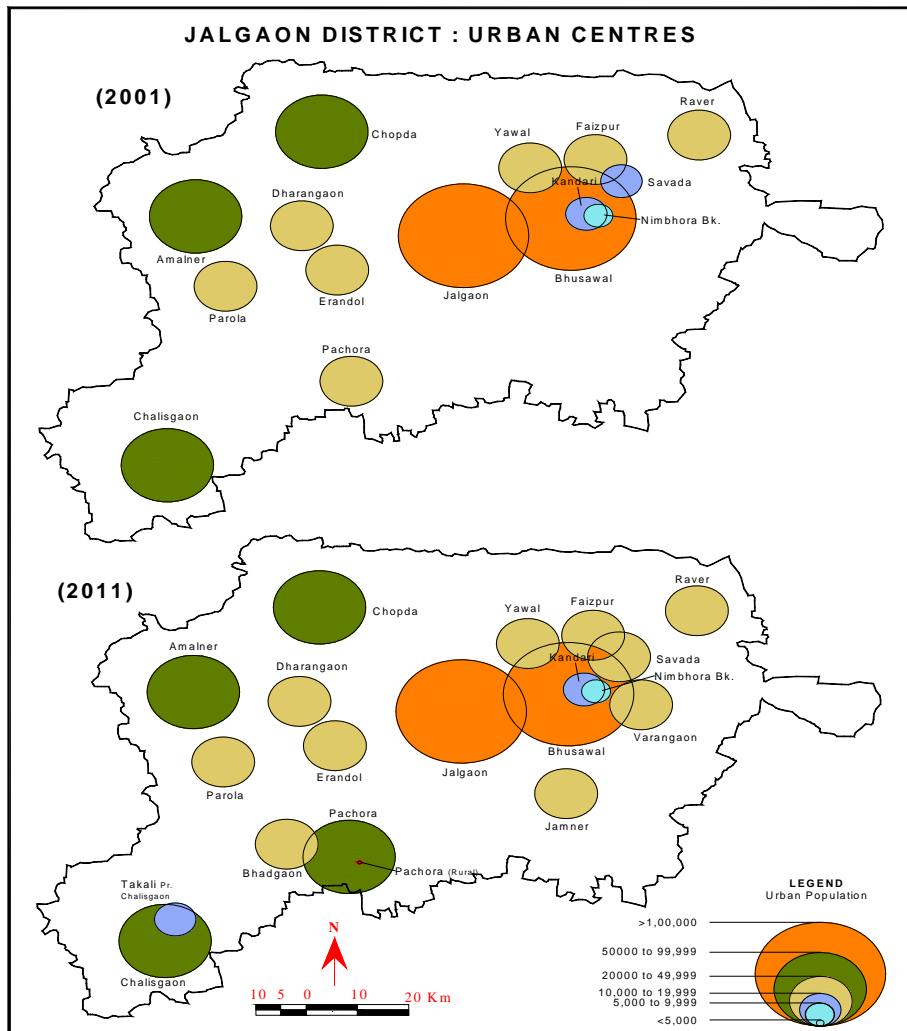


FIG. NO. 2

Table 1: Jalgaon District: Urban Centres according to Population size

Class	Population Size	2001		2011	
		Urban Places	Urban Population	Urban Places	Urban Population
I	1,00,000 and above	Jalgaon, Bhusawal	5,40,990	Jalgaon, Bhusawal	6,47,649
II	50,000 to 99,999	Amalner, Chalisgaon, Chopda	2,43,465	Chalisgaon, Amalner, Chopda, Pachora	3,25,937
III	20,000 to 49,999	Yawal, Faizpur, Raver, Erandol, Dharangaon, Parola, Pachora	2,25,367	Jamner, Parola, Bhadgaon, Yawal, Dharangaon, Varangaon, Erandol, Raver, Faizpur, Savada	3,34,430
IV	10,000 to 19,999	Kandari, Savada	34,524	Kandari, Takali pr. Chalisgaon	26,983
V	5,000 to 9,999	Nimbhora Budruk	8,448	Nimbhora Budruk	7,501

Source: District Census Handbooks of Jalgaon District, 2001 & 2011.

Spatio-temporal change in Total Urban Population

The table No. 2 shows spatio-temporal change occurred in urban population according to the hierarchical orders of towns during the last decade. The urban population of the district has increased by 27.52 percent during the last decade. The table also suggests that the highest growth rate (48.39%) is found in class-III towns. It is followed by class-II towns.

In this category increase is 33.87 percent. Increase of 19.72 percent is observed in class-I cities. It is noticeable that class-IV and V towns have reported declines in urban population. It is due to increase in population, the towns in category in have upgraded into class-III towns. Because of this, the population of these class towns has reported declines during the last decade.

Table 2: Jalgaon District: Urban Population Growth according to Hierarchical Orders of Towns

Sr. No.	Classes	Urban Population		Volume of change
		2001	2011	
1.	I	5,40,990	6,47,649	19.72
2.	II	2,43,465	3,25,937	33.87
3.	III	2,25,367	3,34,430	48.39
4.	IV	34,524	26,983	-21.84
5.	V	8,448	7,501	-11.21
District		1052794	1342500	27.52

Source: District Census Handbooks of Jalgaon District, 2001 & 2011.

Spatio-temporal change in Proportion of Urban Population

In the year 2001, two urban centres were placed on class-I and these two centres were occupying more than half of the total urban population of the district. The urban centres

having II hierarchical orders were 3 and hosting 23.13 percent urban population while 7 urban centres on III order were contributing 21.40 percent of the total urban population.

Table 3: Jalgaon District: Proportion of Urban Population to total Population

Sr. No.	Classes	% of Urban Population		Volume of change	No. of Urban Centres		Volume of Change
		2001	2011		2001	2011	
1.	I	51.39	48.24	-6.12	2	2	0.00
2.	II	23.13	24.28	4.98	3	4	33.33
3.	III	21.41	24.91	16.37	7	10	42.86
4.	IV	3.28	2.01	-38.71	2	2	0.00
5.	V	0.80	0.56	-30.37	1	1	0.00
District		100.00	100.00	0.00	15	19	26.67

Source: District Census Handbooks of Jalgaon District, 2001 & 2011.

There were only 2 towns in category of class-IV and contributing 3.28 percent population. On the V hierarchical order was only one urban centre occupying less than one percent of the total urban population. In the year 2011, though the number of I order centres are same (02) but the proportion of urban population hosting by these centres is declined and it is 48.24 percent which shows decline of 6.12 percent during the last decade. There is an increase one town on class-II and proportion of population occupied by these towns is 24.28 percent. It shows increase of about 5 percent. The highest increase in number of towns and urban population is reported in III order towns. There are 10 towns hosting about one fourth of the total urban population of the district. During the last decade, this order towns have shown highest increase i.e. 16.37 percent in the proportion of urban population. Though the number of towns placed on IV and V

hierarchical orders have not shown increase but the proportion of population of these towns have reported decline of more than 30 percent.

5. Conclusions

The process of urbanization is simply defined as increase in proportion of urban population to total population in a region. The urbanization process is slow in Jalgaon district due to less industrialization. The economy of the district mainly depends upon agriculture and allied economic activities. Only two cities, namely Jalgaon and Bhusawal enjoy the status of first ranked cities. Jalgaon city being the headquarters hosts industrial, trade & commerce activities. Bhusawal is a well-known railway junction on the Central Railway and also has heavy industries like Ordnance factory, thermal power station etc. The proportion of population to

total population of the district has increased during the last decade. The study of spatial and temporal change in distribution of urban population according to hierarchy of urban centres in the district suggests increase in number of urban centres during the last decade. The centres placed of first hierarchical order of urbanization have suggested no change in their number while decline is noticed in percentage of population occupied by these centres. The increase is noticed in both the aspects in towns located on second and third hierarchical orders. It shows that there no further scope for the expansion of first rank cities due to limited carrying capacity. Therefore, second rank cities like Chopda, Pachora, and Chalisgaon etc. are showing growth due to expansion and development of new economic activities. Total population and its proportion to total urban population has decline in towns placed on fourth and fifth order urban centres.

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