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"comparative Study Of Urbanisation In Ahmednagar District, Maharashtra And India: A Quantitative Analysis"

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Abstract

This paper compares urbanization in Ahmednagar district with Maharashtra state and India based on the selected six indicators of urbanisation viz., percentage of urban population, urban-rural ratio, decadal growth of urban population, average size and spacing of urban centres and concentration of urban centres. Indian Census reports are main sources of secondary data for this paper. Multi-indicator method has been employed for measuring level of urbanization. It is devised by Verma (1979) and Kundu (1980). Variations in urbanization are found in Ahmednagar district, Maharashtra and India. It is essential to note that level of urbanisation is continuously lower in Ahmednagar district than that of Maharashtra and India. Six indicators of urbanisation show that, there is low level of urbanisation is found in Ahmednagar district than that of both in the Maharashtra state and India.

KEY WORDS: *Gini's concentration ratio; urban growth; urban-rural ratio; urban spacing and Urbanization.*

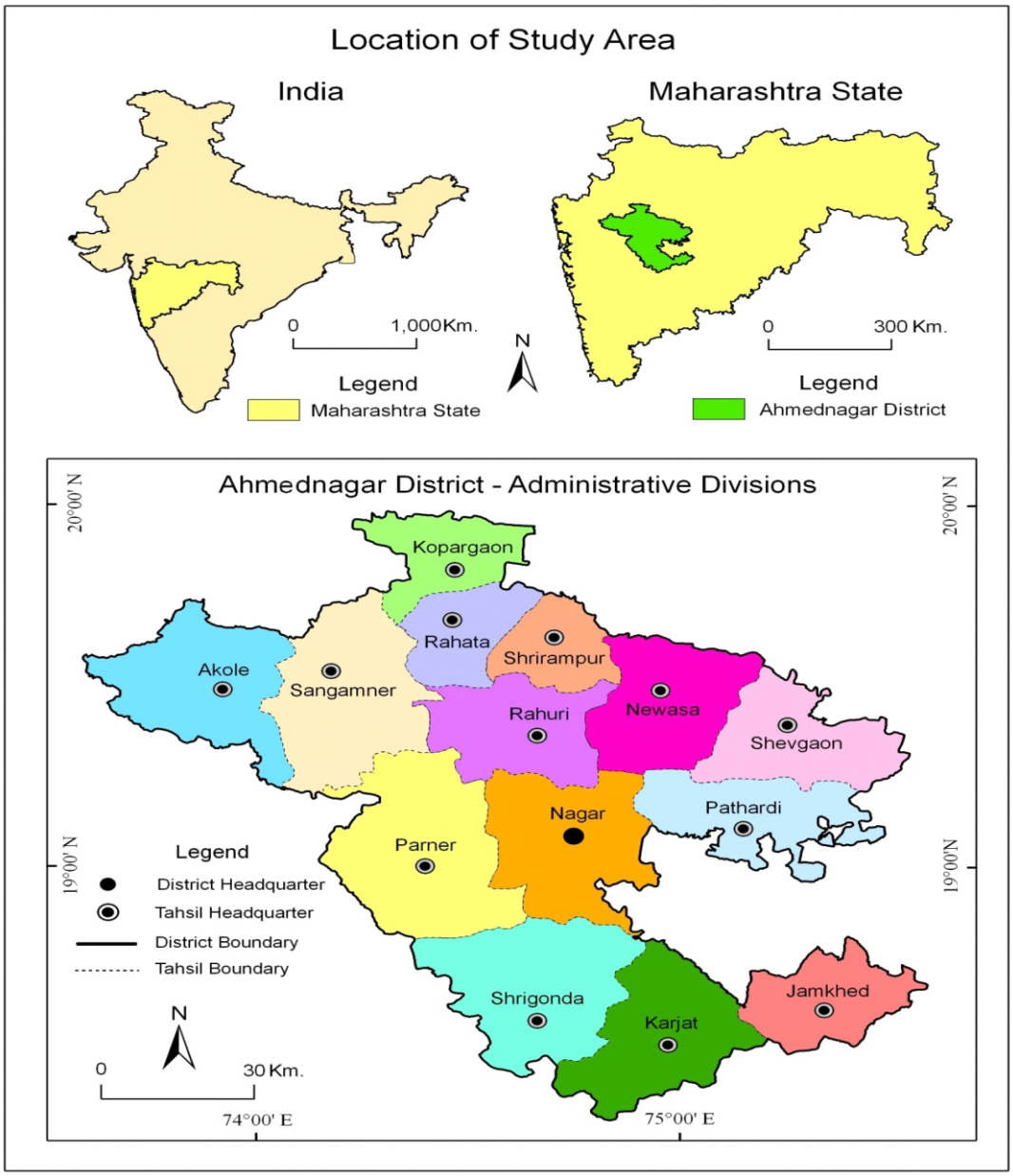
Introduction:

Urbanization has been a popular and interested field amongst a variety of scholars such as geographers, sociologists, demographers, town planners, and economists. Urbanization is basically a product of demographic explosion and result of rural-urban migration. It is occurring not only due to urban pull factors but also due to rural push factors. Urbanization is an index of transformation from traditional rural economies to modern industrial one.

Number of urban agglomeration / towns has grown from 08 in 1901 to 18 in 2001 of Ahmednagar district. Population residing in urban areas has increased from 78,221 in 1901 to 8, 03,697 in 2001. Only 9.54 percent was urban population in 1901 whereas 19.90 % of population was living in urban areas as per 2001 census. Ahmednagar district has low proportion of urban population i.e., only 9.54 per cent in 1901 to 20.10 per cent in 2011, throughout the period from 1901 to 2011 as against significantly higher proportion in the Maharashtra from 16.50 per cent in 1901 to 45.23 per cent in 2011 and it was for India from 10.84 per cent in 1901 to 31.16 per cent in 2011.

Study Area

Ahmednagar district of Maharashtra state has been selected for the comparison of urbanisation with Maharashtra and India. Ahmednagar district is situated partly in the upper Godavari basin and partly in the Bhima basin, occupying a somewhat central position in Maharashtra State. It extends between $18^0$2' north and 19^0 9' north latitudes and $73^0$9' east and $75^0$5' east longitudes. The district is irregular in shape and resembles a slanting cross with a length of 200 kms. and breathe of 210 kms.



Map-1: Location of Study Area.

It is surrounded by Nashik district to the north, Aurangabad district to the north-east, Bid district to the east, Osmanabad and Solapur districts to the south, Pune district to the west and Thane district to the north-west. The Ahmednagar district is one of the largest districts of Maharashtra in respect of area. District covers an area of 17,048 Km2, with 40, 40,642 populations and it consist in 14 tahsil, 1587 villages, 11 statutory towns and 07 census town.

Objectives:

The present paper aims at investigating and comparing the selected indicators of urbanization in Ahmednagar district with Maharashtra and India. Following are the main objectives to achieve aim.

- To compare levels of urbanization and urban-rural ratio in Ahmednagar district with Maharashtra and India.
- To examine urban growth rate in Ahmednagar district with Maharashtra and India.
- To compute average size and spacing of urban centers of urban population in Ahmednagar district, Maharashtra and India.
- To calculate Gini's Concentration ratio to determining concentration of urban population.

Database And Methodology:

The entire paper is prepared based on secondary database collected from Indian Census reports and Socio-economic review of statistical abstract for the period from 1901 to 2011. The collected data has been tabulated and processed in required suitable format. The require data to measuring the dimensions of urbanization is computed simply by statistical methods such as percentage method, ratio, mean and Gini's concentration ratio and standardize score.

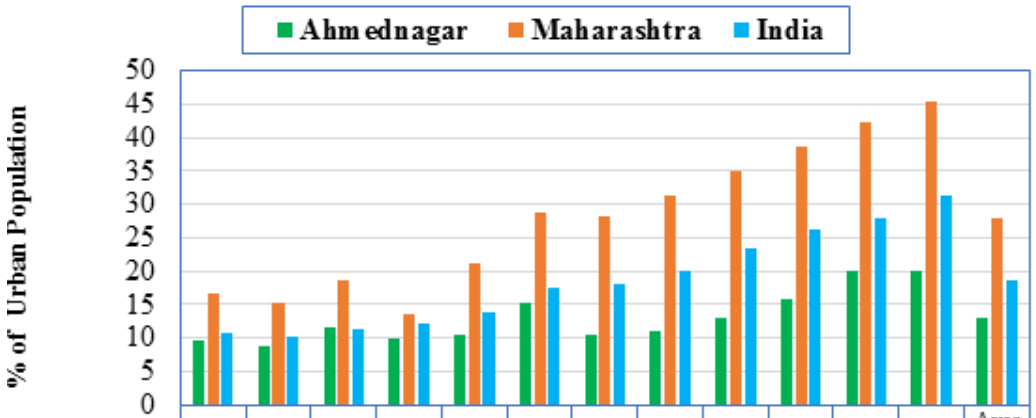
There are various methods advocated by different authors and scholars to measures the dimensions of urbanization process. Selected six indicators given below are considered for comparison of dimensions of urbanization in Ahmednagar district with State of Maharashtra and India.

1. Percentage of Urban Population.
2. Ratio of urban population to rural population.
3. Percentage of Decadal Growth of Urban Population.
4. The Average Size of Urban Centers.
5. The Average Spacing of Urban Centers.
6. Gini's Concentration Ratio.

1. Percentage of Urban Population:

It is the most commonly used method of measuring the degree of urbanization. The percentage of urban population to total population is considered as an index of degree of urbanization. It is computed from the following formula:

$$\text{Percentage Urban Population} = \frac{\text{Total Urban Population}}{\text{Total population}} \times 100$$



	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011	Average
Ahmednagar	9.54	8.67	11.48	9.81	10.57	15.23	10.55	11.08	12.97	15.8	19.9	20.1	12.97
Maharashtra	16.5	15.1	18.5	13.6	21.1	28.8	28.2	31.2	35	38.7	42.4	45.23	27.86
India	10.8	10.3	11.2	12	13.9	17.6	18	19.9	23.31	26.1	27.8	31.2	18.51

Fig.1: Percentage of Urban Population:1901-2011

Source: Compiled by Author based on Census of India data.

The census data for proportion of urban population to total population in these three cases have been compiled and presented in the fig-1. It is clearly observed that the Ahmednagar district has low proportion of urban population i.e., only 9.54 per cent in 1901 to 20.10 per cent in 2011, throughout the period from 1901 to 2011 as against significantly higher proportion in the Maharashtra from 16.50 per cent in 1901 to 45.23 per cent in 2011 and it was for India from 10.84 per cent in 1901 to 31.16 per cent in 2011.

The percentage of urban population has shown continuously increasing trend except 1901 to 1911 in the Ahmednagar district, Maharashtra and India. But fluctuations are occurred in proportion of urban population for three cases. Fig.-1 revealed that urban population has been decreased from 9.54 per cent in 1901 to 8.67 per cent in 1911, from 11.48 per cent in 1921 to 9.81 per cent in 1931and from 15.23 per cent in 1951 to 10.55 per cent in 1961. Later on, urbanization indicates increasing trend from 12.97 per cent in 1981 to 15.82 per cent in 1991, from 19.89 per cent in 2001 to 20.10 per cent in 2011.

2) Ratio of Urban to Rural Population (U/R):

In this indicator the impact of urbanization on rural base of the district taken into consideration. It can be calculated with the help of following equation.

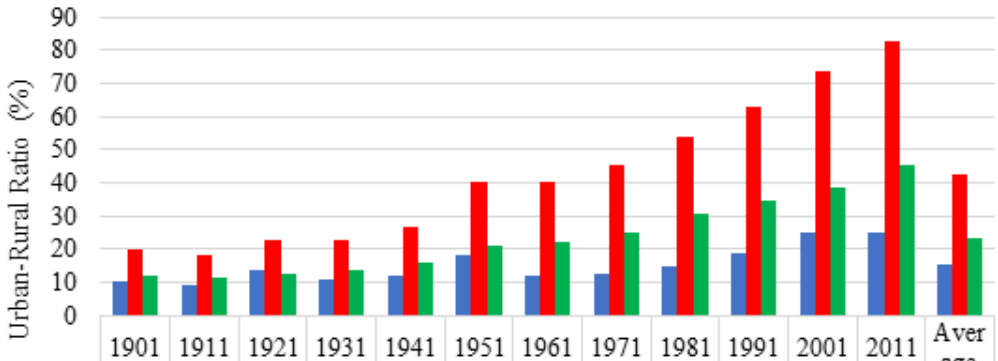
$$RUR = \frac{UP}{RP} \times 100$$

Where:

RUR : the ratio of urban population to rural population.

UP: the urban population of 'x' unit.

RP : the rural population of the same unit.



	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011	Average
Ahmednagar	10.51	9.23	13.4	10.85	11.79	17.92	11.77	12.44	14.88	18.79	24.83	25.13	15.13
Maharashtra	19.8	17.91	22.7	22.85	26.76	40.35	40.49	45.28	53.92	63.1	73.7	82.58	42.45
India	12.16	11.47	12.58	13.63	16.08	20.91	21.91	24.85	30.44	34.63	38.47	45.27	23.53

Fig.-2: Uraban-Rural Ratio (%) 1901-2011

Source: Compiled by Author based on Census of India data.

Fig-2 revealed that Maharashtra has highest urban-rural ratio than that of Ahmednagar district and India. Ahmednagar District showing highest ratio i.e., 25.13 per cent in 2011 and 24.83 percent in 2001. Maharashtra shows 19.8 percent urban rural ratio in 1901 to 82.58 in 2011. India's urban-rural ratio was 12.16 percent in 1901 to 45.27 percent in 2011.

It is summarised that there were increasing trend of urban-rural ratio in three of cases but variations are found in these three of cases and Maharashtra shows highest urban-rural ration.

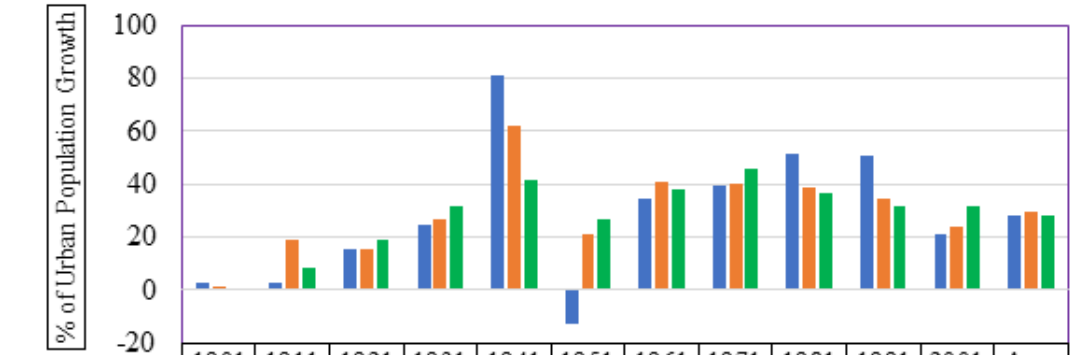
Ahmednagar district shows lowest urban rural ration than that of Maharashtra and India. Average urban rural ratio also observed highest i.e., 42.45 percent in Maharashtra followed by India i.e., 23.53 and Ahmednagar i.e., 15.13 percent district.

3) Percentage of Decadal Growth Rate of Urban Population:

Process of urbanization mainly depends on urban population growth rate. The decadal urban growth rate simply finds out by the following formula.

$$UGR = \frac{P_2 - P_1}{P_1} \times 100$$

UGR = Decadal urban growth rate (%).
P_1 = the urban population of 'x' unit in the initial decade
P_2 = the urban population of 'x' unit in the later decade.
t = the period between P1 and P2.



	1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81	1981-91	1991-01	2001-11	Average
Ahmednagar	2.58	2.86	15.21	24.87	80.95	-12.9	34.27	39.71	51.8	50.7	20.98	28.28
Maharashtra	0.99	18.72	15.54	27.11	62.42	21.32	40.75	39.9	38.9	34.3	23.64	29.42
India	0.3	8.3	19.1	32	41.4	26.41	38.23	46.14	36.44	31.51	31.8	28.33

Fig. 3 : % of Urban Population Growth Rate: 1901-11 To 2001-2011

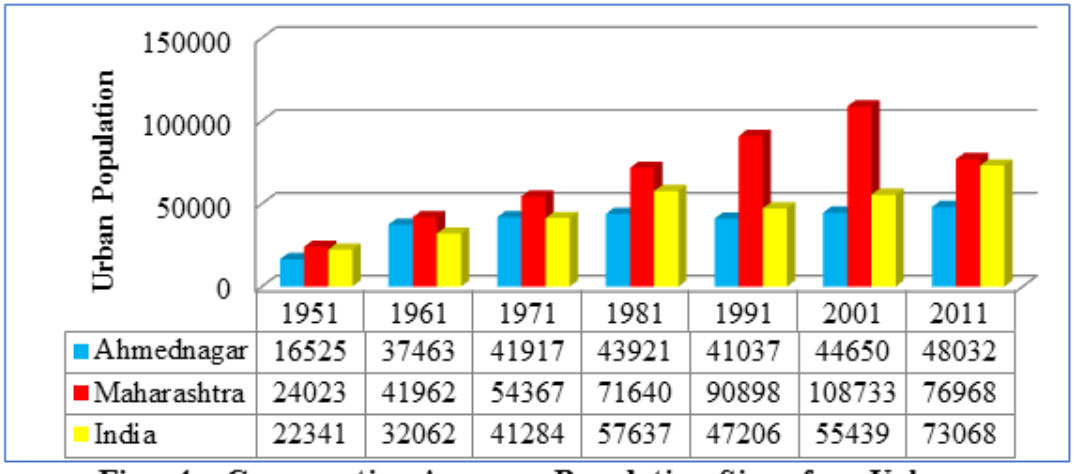
Source: 1) Compiled by Author based on Census of India data.
2) Ahmednagar District Census Handbook, 2001-Statement 3, P. xxiii.
3) Census Registrar General, India. http://www.censusindia.gov.in

Fig.-3 indicates that Ahmednagar district an increase of urban population during the 1901-11 was least than another decade but higher than Maharashtra and India. Highest growth rate i. e. 80.95 per cent recorded during the decade 1941-51, followed by in 1981-91 it was 51.80 per cent and in 1991-2001 it was 50.70 per cent. Growth rate during the decades of 1911-21 to 1931-41, 1951-61(minus) to 1971-81 and 2001-2011 decades are indicates district urban growth rate is lower than that of state and nation.

4) The Average Population Size of an Urban Centre:

The average size of an urban Centre is computed by dividing the total urban population of the concerned region by the number of urban centers / places. Following formula adopted for 'the average size of urban Centre' which is measuring levels of urbanization.

$$\text{The average size of an urban Center} = \frac{\text{Total Urban population}}{\text{Number of urban centress}}$$



	1951	1961	1971	1981	1991	2001	2011
Ahmednagar	16525	37463	41917	43921	41037	44650	48032
Maharashtra	24023	41962	54367	71640	90898	108733	76968
India	22341	32062	41284	57637	47206	55439	73068

Fig.- 4 : Comparative Average Population Size of an Urban Centres: 1951-2011

Source: Compiled by Author based on Census of India data.

Calculated values of the average size of an urban Centre from 1951 to 2011 for the Ahmednagar district, Maharashtra and India given by fig-4.

Figure and its table clearly indicate that the average size of urban Centre is continuously higher in Maharashtra and India than that of study area. Fig. and table also prove that average size of urban Centre is higher in Maharashtra than India and study area. But, increasing trend of average size of urban centers are observed in three the cases. It means that towns and cities of study area, Maharashtra and India became big size year by year. In 1951, average population size of urban Centre in study area was 16,525, for Maharashtra it was 24,023 and for India it was 22,341. According to census 2011, the size of urban centers for study area was 48032, for Maharashtra it was 76968 and for India it was 73068. Thus, in terms of average population size, town or urban centers in study area are little than that of Maharashtra and India.

This yields the area being served by one urban Centre. It is presumed that the area being served by the urban Centre is circular in shape and the radius of the circle can be computed if the area of the circle is known. Once the radius of such a circle is known, the average spacing between the two urban places would be equal to twice this radius. The size and spacing combined together do yield a fairly reliable index of the degree of urbanization in any area.

(5) The Average Spacing of An Urban Centers:

It is one of the measures of degree of urbanization, which is used coupled with average size of an urban centers. Average spacing has been used as a measure of degree of urbanization both at micro and macro levels. It is work out simply by the formula given below.

$$\text{The average spacing of an urban Center} = \frac{\text{Total area of the region}}{\text{Number of urban centres}}$$

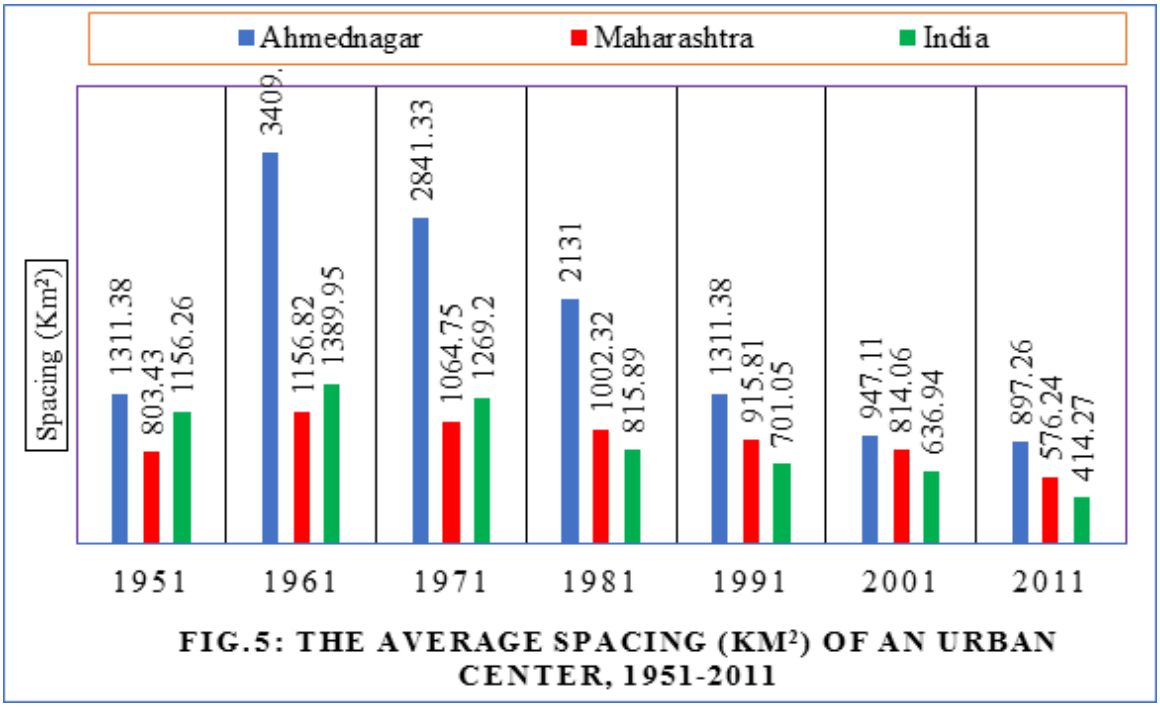


FIG.5: THE AVERAGE SPACING (KM²) OF AN URBAN CENTER, 1951-2011

Calculated values are given in fig-5 and presented it by bar graph. Fig-5 is clearly indicating, the average spacing of an urban Centre was higher in Ahmednagar district than that of Maharashtra and India during the period from 1951 to 2011. Ahmednagar District revealed that average spacing of an urban Centre was 1311.38 Km2 in 1951 and it was 803.43 Km2 for Maharashtra and 1156.82 Km2 for India.

After the 1951, consecutive year the spacing of an urban center was continuously goes down from 3409.6 Km2 for Ahmednagar district, 1156.6 for Maharashtra and 1389.95 km2 for India in 1961 to 897.26 Km2 for Ahmednagar district, 576.24 Km2 for Maharashtra and 414.27 km2 for India respectively in 2011. These all the figures prove that the average spacing in urban Centre decreased in investigated period for the three the cases.

The decreased spacing is an indicates that levels of urbanization and density of urban population and urban centers accelerated in three the cases viz., Ahmednagar District, Maharashtra and India. It is essential to note that Ahmednagar district shows more average spacing in the urban centers than that of Maharashtra and India. It means that level of urbanization and density of urban population and urban centers found to be lower in Ahmednagar district than that of Maharashtra state and India.

6) Co-efficient of urban Concentration (Gini Concentration Ratio) :

It can also be computed with the help of the 'Gini concentration ratio'. Following formula is adopted for the compute this ratio:

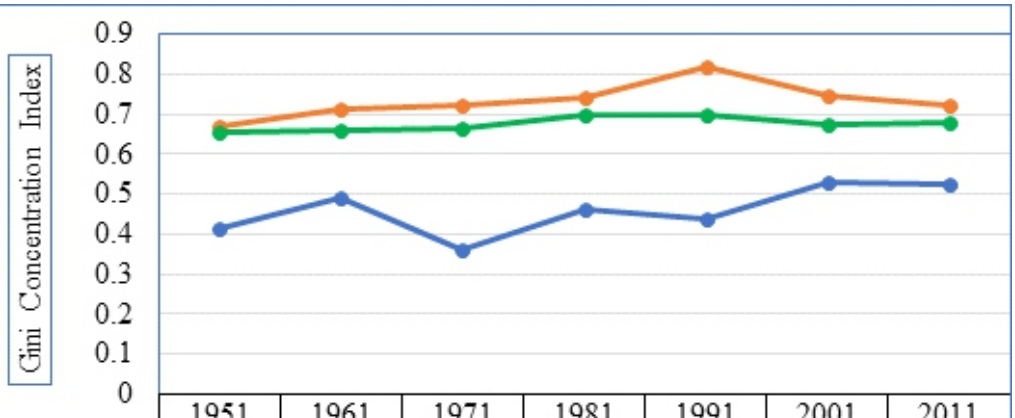
$$Gi = [(\sum_{i=1}^{n} x\,i\,Yi + 1) - (\sum_{i=1}^{n} Xi + 1Yi)]$$

Where:

Gi refers to the Gini concentration ratio.
Xi refers to cumulative proportion of population
Yi refers to cumulative proportion of units.
n refers to the number of class intervals.

When the entire urban population is concentrated at one point, the Gini concentration ratio becomes unity 1.000. Lower values of this ratio, thus, imply a more uniform distribution of urban population and vice versa.

Figure-6 shows that year wise and unit wise variations in Gini Concentration ratio with line graph. The concentration ratio shows that, it was higher i.e., 0.5293 for Ahmednagar district in the year 2001, and for both the Maharashtra and India it is highest i.e., 0.8159 and 0.6957 respectively in 1991.It means that, Ahmednagar District exhibits that comparatively more uneven distribution of urban population in 2001 than other years and Maharashtra and India exhibits more uneven distribution of population in 1991 than other years. Fig.-5 also denotes lower the concentration ratio in the year 1971 for Ahmednagar district and in 1951 for the Maharashtra and India. It means that in these years imply comparatively a more uniform distribution of urban population than other year.



	1951	1961	1971	1981	1991	2001	2011
Ahmednagar	0.4147	0.4903	0.3614	0.4595	0.4385	0.5293	0.5227
Maharashtra	0.6665	0.7112	0.722	0.7413	0.8159	0.7463	0.7224
India	0.6544	0.6577	0.6658	0.6954	0.6957	0.6741	0.6775

Fig. 6 : Co-efficient of Urban Concentration: 1951-2011

Source: Compiled by Author based on Census of India Data.

But Ahmednagar district index denotes 0.3614 which has much lower (i.e., approximately one half) than 0.6665 and 0.6544 for Maharashtra and India respectively. It is proving from the Gini concentration ratio presented by fig. 6 that both Maharashtra and India continuously indicate that more uneven distribution of urban population than Ahmednagar district.

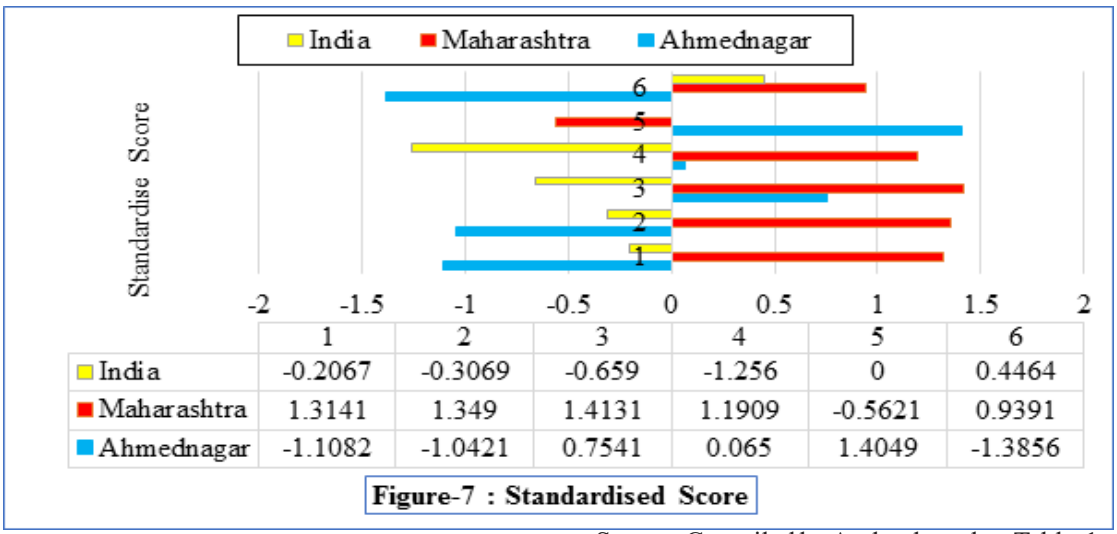
It is also essential to note that, Fig.-6 proving comparatively more uneven distribution of urban population observed in Maharashtra than India and Ahmednagar district.

Table-1: Comparative Urbanisation of Ahmednagar, Maharashtra and India

Sr. No.	Selected Indicators of Urbanisation	Score	Average values		
			Ahmednagar	Maharashtra	India
1.	Percentage of Urban Population.	Actual	12.97	27.86	18.51
		Standardise (Z)	-1.1082	1.3141	-0.2067
2.	Ratio of urban population to rural population.	Actual	15.13	42.45	23.53
		Standardise (Z)	-1.0421	1.3490	-0.3069
3.	Percentage of Decadal Growth of Urban Population.	Actual	28.28	29.42	28.33
		Standardise (Z)	0.7541	1.4131	-0.6590
4.	The Average Size of Urban Centers.	Actual	39078	66943	6383.56
		Standardise (Z)	0.0650	1.1909	-1.2560
5.	The Average Spacing of Urban Centers.	Actual	1513.75	987.09	911.94
		Standardise (Z)	1.4049	-0.5621	-0,8428
6.	Gini's Concentration Ratio.	Actual	0.4595	0.7322	0.6744
		Standardise (Z)	-1.3856	0.9391	0.4464

Source: Compiled by Author based on figure 1 to 6.

Note: Z-Scores: These scores are scaled on a number line ranging from -4 to +4. On this scale, zero is average. Positive scores are above average, and negative scores are below average.



	1	2	3	4	5	6
India	-0.2067	-0.3069	-0.659	-1.256	0	0.4464
Maharashtra	1.3141	1.349	1.4131	1.1909	-0.5621	0.9391
Ahmednagar	-1.1082	-1.0421	0.7541	0.065	1.4049	-1.3856

Figure-7 : Standardised Score

Source: Compiled by Author based on Table-1

Table-1 and figure -7 illustrated comparative clear-cut picture of selected 6 indicators of urbanisation in Ahmednagar district, Maharashtra and India. It is proven from the actual and standardise score that Maharashtra indicates high urbanisation followed by India and Ahmednagar district.

Result And Conclussion:

A comparative study was conducted to considering urbanisation in Ahmednagar District with Maharashtra and India. Urbanization is one of the indicators of economic development. Therefore, urbanization play vital role in economic development. It is concluded and summarized from the above discussion that, proportion of urban population, urban rural ratio, decadal growth rate of urban population and average size of urban Centre in Ahmednagar district exhibits continuously lower than that of Maharashtra and India for the period from 1951 to 2011. On the other hand, proportion of urban population, decadal growth rate of urban population and average size of urban Centre in Maharashtra and India revealed comparatively more than that of Ahmednagar district.

It is essential to note that Ahmednagar district shows more average spacing in the urban centers than that of Maharashtra and India. It means that level of urbanization and density of urban population and urban centers found to be lower in Ahmednagar district than that of Maharashtra state and India. It is proving from Gini's concentration ratio that; Maharashtra and India continuously indicate that more uneven distribution of urban population than Ahmednagar district.

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