



Urbanisation as an Indicator of Development of India: An Introspective Study Through Gini Concentration

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ABSTRACT: Introduction: Development and urbanisation are closely related, but the two have no clear-cut relationship. The process of urbanisation can be measured in terms of many demographic dimensions. **Objective:** The paper aims to calculate the Gini Concentration Ratio (GCR) of the urban population, i.e., the Coefficient of urban concentration for the urban towns in India for the 2001 and 2011 censuses, to examine whether urban concentration increases or not, leading to urbanisation. **Method:** This study is an introspective type of research based on secondary data gathered from books, articles, websites, web-based journals, Census Reports, and government offices. **Result and Discussion:** The Gini-Concentration Ratio is used to calculate for 2001 and 2011 censuses, and its different values are interpreted. **Findings:** The value of the Gini concentration ratio of the 2011 census is greater than the 2001 census, indicating that the concentration of the urban population is increasing, thereby developing India. **Conclusion:** A meaningful way to reduce the differences in the rate of urbanisation between rural and urban areas is to prioritise the country's socio-economic development.

I. INTRODUCTION

Whether urbanisation accelerates economic development and income growth or is a byproduct of a broader process of economic development. What is the mechanism that moves people from rural to urban areas if urbanisation is a byproduct of overall economic development, and how does urbanisation expedite the process of economic development? Should an emerging nation prioritise urbanisation in its development plan? Is urbanisation a prerequisite for economic expansion? Economic literature has addressed and discussed these issues in great detail. Although there is theoretical evidence of a two-way relationship between urbanisation and development, numerous empirical studies have shown that urbanisation has increased even in the absence of significant or negative growth. Furthermore, the experiences of a large number of developing nations indicate that urbanisation created a number of social and economic issues, necessitating the allocation of significant government resources to address these issues. Therefore, even though development and urbanisation are

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closely related, there isn't a clear-cut relationship between the two. Compared to other developing nations, India has a relatively low level of urbanisation. Although the rate of urbanisation in many states is less than 30 percent, it is still higher than the average rate from 1950, and the process appears to be accelerating (Narayan, 2014).

In terms of demography, urbanisation is the gradual rise in the share of the population living in urban areas relative to the overall population. Urbanisation is defined as an increase in the proportion of the total population living in urban areas. In the 20th century, there has been a global phenomenon of rapid urbanisation. Urban poverty, which is essentially an extension of rural poverty, makes urbanisation a more pressing issue in developing nations like India. The term "Urbanisation" "implies the movement of people to urban areas" as Thompson has defined it "Urbanisation is characterised by the movement of people from small communities concerned chiefly or solely with agriculture to other communities generally larger whose activities are primarily centred in government trade, manufacture, or allied interests" (Thompson, 1935). "The process through which land and people become urban is known as urbanisation. It alludes to a shift in individuals and locations (Smailes, 1975). The main definition of urbanisation is the ongoing process of altering the distribution pattern of the population. One way to gauge a region's economic prosperity is through its level of urbanisation. The complexity of the definition of "Urban" cannot be overstated, nor can the diversity of national definitions be eradicated. This definition demonstrates how definitions change even within India from Census to Census (Dubey, 1981). Following that, the 1991 census (series I, Vol. II, p. 34) examined and approved the following definition of an urban place based on population and administrative criteria:

1. All statutory towns, i.e., all places with a municipality, corporation, cantonment board or notified town area committee etc. (Administrative criterion).
2. All other places which satisfy the following criterion
 - a) A minimum population of 5000
 - b) At least 75% of male population engaged in non- agricultural activities
 - c) A density of population of at least 400 persons /sq km.
 - d) Important tourist centers and
 - e) Outgrowth of urban centers



According to the above-mentioned criteria, Indian census has classified the Indian towns into six categories, such as:

Class I	Towns having a population of 100,000 or more
Class II	Towns having 50,000 – 99,999 population
Class III	Towns having 20,000 – 49,999 population
Class IV	Towns having 10,000 – 19,999 population
Class V	Towns having 5,000 – 9,999
Class VI	Towns having less than 5,000 population

The Objective of the Study: The paper aims to calculate the Gini Concentration Ratio (GCR) of urban population, i.e., the Coefficient of urban concentration for the urban towns in India for the 2001 and 2011 censuses, to examine whether urban concentration increases or not, leading to urbanisation.

II. METHOD AND MATERIALS

Design and methodology: This study is descriptive in nature and is based on data on urbanisation in Arunachal Pradesh, India, from secondary sources. The information gathered for secondary sources comes from government agencies, books, articles, websites, and online journals that have been published at various points in time.

Data Analysis: Data are organised under appropriate headings of Column and Row in systematic statistical tables after the various materials gathered from the various sources have been carefully examined, validated, and set up under appropriate headings. The necessary presentation and conclusion are held using the various statistical tools.

III. RESULT AND DISCUSSION

Another method of measuring the level of urbanisation is through the use of urban densities. These densities are computed by dividing the region's total area by the total number of urban residents. As a result, the percentage of urban dwellers per square kilometre is computed. These calculations are more helpful when dealing with large, less developed nations. For example, in India, the urban densities may show that the country has a sizable urban population, despite the percentage distribution suggesting a very low level of urbanisation. Likewise, the Gini-Concentration Ratio can calculate a co-efficient urban population concentration. We talk about the population dispersion and the Gini-Concentration Ratio for urbanisation. In 2020, 80% of people in the USA and

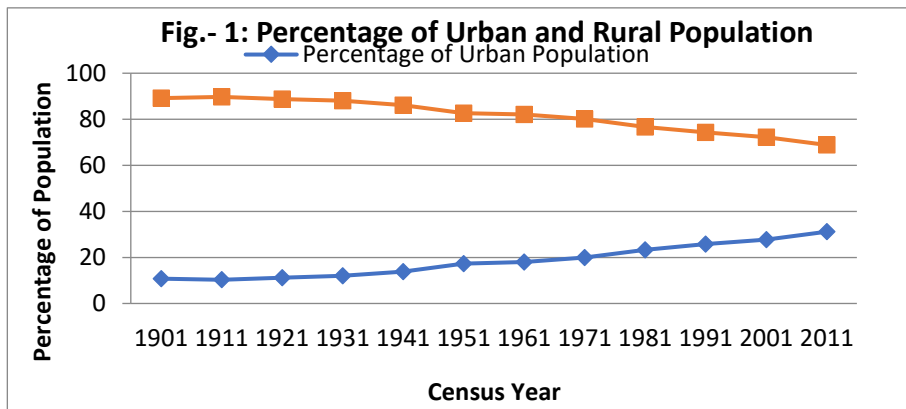


83.9% of people in the UK will live in cities. As of 2018, Monaco (100% urban), Belgium (98% urban), and San Marino (97% urban) are the three most urbanised nations in Europe. Let us examine the trend and status of urbanisation in India since 1901 shown in Table-1.

Table 1: Census Wise Trends of Urban and Rural Population in Percentage Form from 1901-2011 against the Census Towns/Cities

Census year	Number of Towns	Population	Urban Population	Percentage of Urban Population*	Rural Population	Percentage of Rural Population*
1901	1827	238396327	25851873	10.8440	212544454	89.15593
1911	1815	252093390	25941633	10.2904	226151757	89.70951
1921	1949	251321213	28086167	11.1754	223235046	88.82459
1931	2072	278977238	33455989	11.9923	245521249	88.00763
1941	2250	318660580	44153297	13.8559	274507283	86.1441
1951	2843	361088090	62443709	17.2932	298644381	82.70679
1961	2365	439234771	78936603	17.9713	360298168	82.02861
1971	2590	548159652	109113977	19.9055	439045675	80.09449
1981	3378	683329097	159462547	23.3361	523866550	76.66387
1991	3768	844324222	217177625	25.7220	627146597	74.27794
2001	5161	1027015247	285354954	27.7848	741660293	72.21512
2011	7935	1210193422	377105760	31.1607	833087662	68.83922

Source: Source: Census of India for different years. N.B.: * = self calculated.



The Figure 5 is drawn based on Table-4.

Explanation of Table-1 and Fig.-1: In 1901, there were only 25.8 million urban residents in India, or 10.8% of the total population. By 2011, that number had risen to 377 million, or 31.16 percent of the total population. The percentages of the population living in cities and rural areas are both shown in the figure. In contrast to the percentage of rural population, which gradually declines from beginning to end, the percentage of urban population curve gradually rises. It indicates that while the share of people living in cities is growing, the share of people living in rural areas is declining. However, the curve for urban population is slightly downward in 1911 because, at the beginning, the percentage of the urban population in 1911 is slightly lower than that of 1901 in Table 4. But the trend of urban population is positive and upward rising. We may get clear picture if we get census wise change in populations.

Measurement of Urbanisation: Numerous demographic dimensions can be used to quantify the urbanisation process: (i) The extent, (ii) The rate, (iii) The pace, (iv) The population's concentration and dispersion according to the Gini coefficient, (v) The elements of urban growth, etc. Another way to measure the level of urbanisation is through the use of urban densities. These densities are computed by dividing the region's total area by the total number of urban residents. As a result, the percentage of each square kilometre occupied by urban residents is determined. These kinds of calculations are more helpful when dealing with large, less developed nations. For example, in India, the urban densities may show that the country has a sizable urban population, despite the percentage distribution suggesting a very low level of urbanisation. Likewise, the Gini-Concentration Ratio can be used to calculate an urban population



concentration co-efficient. We talk about the population dispersion and Gini-Concentration Ratio for urbanisation. The following formula can be used to calculate the Gini Concentration Ratio (G_i).

$$G_i = \sum_{i=1}^n X_i Y_{i+1} - \sum_{i=1}^n X_{i+1} Y_i$$

Where G_i = Gini Concentration Ratio

X_i = Cumulative Proportion of Population

Y_i = Cumulative Proportion of units and

N = Number of Class Intervals

The value of G_i lies between one and zero.

$G_i = 1$ implies that the entire urban population has concentrated at one point.

$G_i = 0$ implies that the entire urban population has not concentrated. The entire urban population has scattered. Higher the value of ratio means higher the concentration of urban population and lower the value means lower the concentration of urban population. Now we measure the Gini Concentration Ratio for India.

Gini Concentration Ratio (GCR) of Urban Towns in 2001 Census:

Table 2: Distribution of Population in Different Size Classes of Towns in India in 2001

Size Class	Population Range for Size-Class	Number of Towns	%age	Population	%age
All Classes	All Population	5161	100.00	286,119,689	100.00
Class I	1,00,000 & above	441	8.54	178,224,290	62.29
Class II	50,000-99,999	496	9.61	34,451,500	12.04
Class III	20,000- 49,999	1388	26.89	42,119,280	14.72
Class IV	10,000- 19,999	1561	30.25	22,593,015	7.90
Class V	5,000-9,999	1041	20.17	7,889,668	2.76
Class VI	Below 5000	234	4.53	841,936	0.29

Source: *Urban Statistics Handbook, 2008, National Institute of Urban Affairs*



The distribution of the urban population among the cities shows the concentration of urban population much more clearly. Big cities are home to a sizable portion of the urban population. In 2001, it was discovered that 441 class I cities accounted for about 62% of the urban population, with the remaining 38% living in 4720 class II, III, IV, V, and VI towns. Thus, according to Sivaramakrishnan, Kundu, and Singh (2005), 62% of urban residents resided in 8.5% of urban areas in 2001.

Table 3: Computation of Gini Concentration Ratio for Urban Towns as per 2001 Census

Size Class	Number of Towns	Population	Proportion of		Cumulative Proportion of		$X_i Y_{i+1}$	$X_{i+1} Y_i$
			Number of Towns (Unit)	Population	Unit (Y_i)	Population (X_i)		
1	2	3	4	5	6	7	8	9
Class I	441	178,224,290	0.0854	0.6229	0.0854	0.6229	0.1131	0.0635
Class II	496	34,451,500	0.0961	0.1204	0.1816	0.7433	0.3349	0.1617
Class III	1388	42,119,280	0.2689	0.1472	0.4505	0.8905	0.6705	0.4367
Class IV	1561	22,593,015	0.3025	0.0790	0.7530	0.9695	0.9519	0.7507
Class V	1041	7,889,668	0.2017	0.0276	0.9547	0.9971	0.9971	0.9547
Class VI	234	841,936	0.0453	0.0029	1	1	3.0674	2.3673
Total	5161	28,61,19,689	1	1				

Source: *Urban Statistics Handbook, 2008, National Institute of Urban Affairs*

Gini Concentration Ratio (GCR) for 2001 Census (G_i)=

$$\sum_{i=1}^n X_i Y_{i+1} - \sum_{i=1}^n X_{i+1} Y_i$$

$$= 3.067376097 - 2.367337477 = 0.70003862$$

The value is > 0.50 but < 1 .

It explains that the urban population is not concentrated at a point and is not scattered.

GCR = 0.70 means moderate concentration but slightly high.



Computation of Gini Concentration Ratio

Table 5 has been constructed to calculate the method of computing Gini Concentration Ratio (GCR).

Step-1: Under Col. 2, we calculate the total number of category of towns and under Co. 3, we calculate the total population corresponding to the Size of Urban place.

Step-2: Under Col. 4 and Col. 5, we calculate the proportion of units (Number of Towns) and population corresponding to the Size of Urban place.

Step-3: Under Col. 6 and Col. 7, we calculate cumulative proportion (less than type) of units and population.

Step-4: Under Col. 8, we need the multiplication of first value under Col. 7 by the second value under Col. 6 and so on following $X_i Y_{i+1}$. Under Col. 9, similarly we are multiplying the second value under Col. 7 by the first value under Col. 6 and so on, following $X_{i+1} Y_i$.

Step-5: we calculate the sum total of values under Col. 8 and under Col. 9 separately.

Step-6: Lastly, we have to calculate the difference between the total sum values under Col. 8 and Col. 9 as per the formula. The difference is the Gini Concentration Ratio (GCR) or Co-efficient of urban concentration.

The GCR is also called co-efficient of urban population concentration. The value of GCR is 0.70003862, which is greater than 0.50. So, the concentration of urban population is high in the towns of the 2001 Census.

Population in Different size Classes of Towns in India as per 2011 Census

Table-4: Distribution of population in different size classes of towns in India, 2011

Class Size	size of population	Number of towns	Urban Agglomerations	Total population
CLASS-I	1,00000 & above	170	298	264745519
CLASS-II	50,000-99,999	374	100	32179677
CLASS-III	20,000-49,999	1298	75	41833295
CLASS-IV	10,000-19,000	1682	1	24012860
CLASS-V	5,000-9,999	1749		12656749
CLASS-VI	below 5000	424		1678025
Total		5697	474	377106125



Source: Census of India, 2011, Table A-04

Table 5: Computation of Gini Concentration Ratio for Urban Towns in India as per 2011 Census

Size Class	No. of Towns	Population	Proportion of		Cumulative Proportion of		$X_i Y_{i+1}$	$X_{i+1} Y_i$
			Number of Towns	Population	Number of Towns (Y_i)	Population (X_i)		
1	2	3	4	5	6	7	8	9
CLASS-I	170	264745519	0.0298	0.7020	0.0298	0.7020	0.0670	0.0235
CLASS-II	374	32179677	0.0656	0.0853	0.0955	0.7874	0.2546	0.0858
CLASS-III	1298	41833295	0.2278	0.1109	0.3233	0.8983	0.5557	0.3110
CLASS-IV	1682	24012860	0.2952	0.0637	0.6186	0.9620	0.8904	0.6158
CLASS-V	1749	12656749	0.3070	0.0336	0.9256	0.9956	0.9956	0.9256
CLASS-VI	424	1678025	0.0744	0.0044	1	1	2.7632	1.9617
Total	5697	377106125	1	1				

Source: Census of India, 2011, Table A-04

Gini Concentration Ratio (GCR) for 2011 Census =

$$\sum_{i=1}^n X_i Y_{i+1} - \sum_{i=1}^n X_{i+1} Y_i$$

$$= 2.763229789 - 1.96170534 = 0.801524449$$

The value is > 0.5 but < 1 .

It explains that the concentration of urban population is not concentrated at a point and not scattered.

GCR = 0.80 . 0.50 means that urban population is highly concentration in urban centres.

IV. FINDINGS

From Tables 3 and 5 shown above, the computed value of Gini concentration ratio for the urban population living in various size categories of urban centers in India are 0.70003862 in 2001 census and 0.801524449 in 2011 census, which are greater than 0.50. The high coefficient of urban concentration implies that the urban population is



proportionately concentrated in the country. Again, the value of Gini concentration ratio of 2011 census is greater than 2001 census, indicating that the concentration of the urban population is increasing. The rural people are coming to settle down at urban centres. It tells that urbanisation is growing, that is, the country is approaching towards development.

V. CONCLUSION

An important way to reduce the difference in the urbanisation rate between rural and urban areas is to prioritise socio-economic development. Although urbanisation is seen as a necessary component of development, unplanned urbanisation can lead to shortages in a number of areas, including housing, shelter, essential health services, sanitation, clean air, drinkable water, education, transportation, and energy. Wide-ranging policies are required to urbanise the nation in the service of general economic growth. Hence, a more thorough, methodical, and scientific investigation is needed before urban planning. Before being put into effect, comprehensive land-use planning, revisions to administrative procedures and planning standards, and appropriate research should be done.

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REFERENCES

- Chandna R.C.(2005): Geography of Population: Concepts, Determinants and Patterns, Kalyani Publications, New Delhi.
- Dubey, R. M. (1981), Population Dynamics of India. (Allahabad, Chung Publications), p. 3
- Narayan, Laxmi (2014): Urbanisation and Development, International Journal of Research (IJR) Vol-1, Issue-8, September 2014
(https://www.researchgate.net/publication/315456525_Urbanization_and_Development) Retrieved on 07/03/2024.
- Thompson, W.S. (1935), Urbanization in Encyclopaedia of Social Sciences Vol. XV, (Mac Millan), P. 1890
- Smailes, A.E. The Definition and Measurement of Urbanization in Johnes, Ronald. (1975), Essays on World Urbanization, (London, George Phillip and Sons, Ltd. p,1
- Sivaramakrishnan, K.C, Kundu, A. and Singh, B.N.(2005). *Handbook of Urbanisation in India*. New Delhi: Oxford.