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URBANISATION, CITY SIZE AND ITS GROWTH : A CASE STUDY OF TAMIL NADU, INDIA

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Short Profile

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ABSTRACT:

The world is in the throes of a sweeping population shift from the countryside to the city. Underpinning this transformation are the economies of scale that make concentrated urban centers more productive. The growth of cities has the potential for further growth and poverty reduction across many emerging markets. The present study describes the level of urbanisation, city size and its growth rate of Tamil Nadu.The state ranks first in urbanisation among the fifteen major States in the country. the state has increased from 15.07% during the year 1911 to 34.15% during the 1991 census and further to 44.04% during 2001 census. The decadal growth of the urban population for the state during the period from 1991 to 2001 has shown a massive increase of about 44.06%. The highest levels of urbanisation are found in the districts of Cheenai, Coimbatore, Kanyakumari Districts. Correlation between the city-size and its growth rate, we find that the correlation for all types of towns combined comes out to be 0.988. This shows a very, very high correlation and thus the hypothesis that city size growth is proportional to its growth population stands accepted. If we look at urbanisation or urban growth by instantaneous method, the results are

staggering. While the growth of urban areas by this method is satisfactory for classes I, II and III towns, it raises exponentially in the rest three categories. This anomaly in Tamil Nadu can also be possible due to low growth rate of population and high out-migration from urban areas to Gulf Countries. Also the high literacy rate of Tamil Nadu is responsible for this phenomenon. .

KEYWORDS : *sweeping population shift , hypothesis , urban growth.*

1.0: INTRODUCTION

The urban size is an important attribute influencing urban population growth. Urban population is usually distributed among settlements of differing sizes along a continuum from small towns to giant cities with population of tens of millions. Urbanisation is a product of demographic explosion and poverty induced rural-urban migration. Urbanisation is occurring not due to urban pull but due to rural push. Globalization, liberalization, privatization are addressing negative process for urbanisation in India. Policy relates to proper urban planning where city planning will consist of operational, developmental and restorative planning.

A slow but unstoppable change is taking place in India. It will affect everything people do, the very way they live and work. This change is the on-going unplanned, haphazard urbanisation happening in India. India's urbanisation is often termed as over urbanisation, pseudo- urbanisation. The small and intermediate towns are expected to grow slowly compared to large cities in the early phases of urbanisation. In the latter phase small towns are expected to grow as a result of congestion and crowding in the large and intermediate towns. The big cities attained inordinately large population size leading to virtual collapse in the urban services and followed by basic problems in the field of housing, slum, water, infrastructure, quality of life etc. The problems are staggering, and it is imperative that we pay attention immediately to the possibilities and consequences. In 2001, only 28% of the Indian population about 285 million people lived in urban settings. Using a conservative assumption that India’s historically slow rate of urban increase will not change dramatically, the widely accepted projection is an urbanisation level of around 40% in 2030. This, it should be noted, would be below the current global level of 50% and far below the 80% plus level of Europe and North America. By 2030, India’s total population will be around 1.5 billion the largest in the world therefore, the urban population will be around 600 million, more than twice as much as in 2001.

2.0: AIMS AND OBJECTIVES:

This Paper endeavors to illuminate on the process of urbanisation in Tamil Nadu with emphasis on level, tempo of urbanisation and urban morphology using Indian Census data during 1991-2001. It will try to trace –

- To evaluate the size of the cities and the resultant growth by time.
- Understand Pattern of urbanisation in the state.
- To evaluate the growth of a town to its size.
- To show the Primacy of the town.

3.0: DATABASE AND METHODOLOGY

The data used in this project is derived from secondary sources. The main source of data is the Town Directory of the District Census Handbook of the Census of India.

The data has been processed, tabulated, analyzed and mapped using suitable sta¬tistical and cartographic techniques. In the present study, two approaches have been used to estimate the growth rate by size class of towns and cities namely (i) instantaneous approach and (ii) continuous approach.

• The instantaneous approach simply considers the population change within the size class category at two points of time, however, several new towns come up and some of the old towns get classified. The instantaneous approach does not make adjustment for this. Many times the results of urban growth by size class of towns derived from instantaneous approach are misleading.

• The continuous approach on the other hand computes urban growth on the based on population change of only those towns and cities, which are common to two points of time. It is therefore an adjusted rate for new towns and also for declassified towns during the decade under study.

Statistical works done in this are mainly of the following types:

• **Growth Rate:** In this method population growth for the decade is calculated by the formula Population in the current year subtracted from population of the base year divided by population of the base year and the whole multiplied by 100.

• **Correlation:** In this method, the relationship between the size of the population (X) and population growth (Y) is calculated by Karl Pearson's Product Movement Correlation by using the following formula.

$$r = \frac{n\sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{(n\sum_{i=1}^{n} x_i^2 - (\sum_{i=1}^{n} x_i)^2)(n\sum_{i=1}^{n} y_i^2 - (\sum_{i=1}^{n} y_i)^2)}}$$

• Levels of urbanisation in Per cent = Urban Population / Total pop¬ulation X 100

4.0: STUDY AREA

Tamil Nadu State is situated at the South Eastern extremity of the Indian Peninsula bounded on the north by Karnataka and Andhra Pradesh on the east by Bay of Bengal, on the South by the Indian Ocean and on the West by Kerala State. It lies between $8^{o}5'$ and $13^{o}35'$ of northern latitude and $76^{o}15'$ and $80^{o}20'$ of eastern longitude with an area of 1,30,058 square kilometers. It is the 11th largest State in India in area forming 4.11 percent of the country. The State has a coastline of about 1076 Kms, country's third longest coast line.

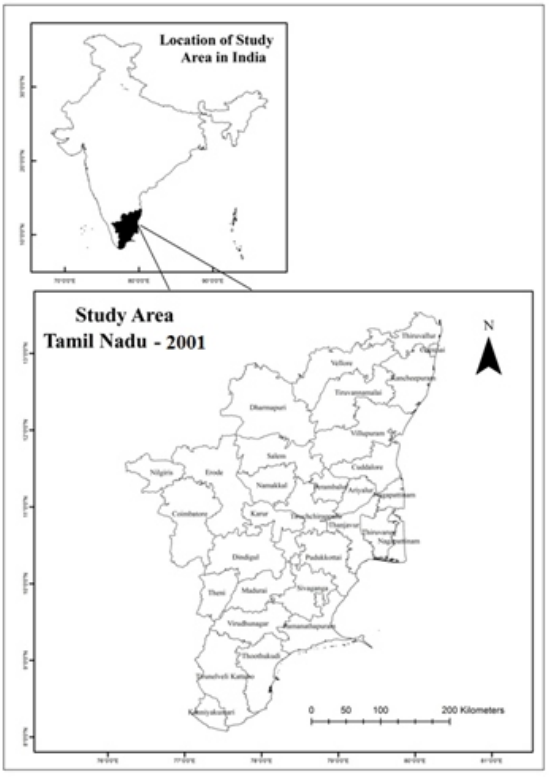


Figure.1.0: Location map of the Study Area

In terms of physical feature, the state can be divided into five major physical divisions - the Kurinji or mountainous region, the Mullai or forest region, the Palai or arid region, the Marudham or the fertile plains and the Neidhal or coastal region. The western, southern and the north-western parts are hilly and rich in vegetation. The Eastern and Western Ghats meet in Tamil Nadu and run along its eastern and western boundaries. The eastern parts are fertile coastal plains. The northern parts are a mix of hills and plains. The central and the south-central regions are arid plains. The Cauvery River, originating in the Coorg district of the neighboring state of Karnataka, is the lifeline of the state. The lush Coromandal plains are irrigated by the Cauvery and its Thanjavur-Nagapattinam delta is called the granary of Tamil Nadu.

5. RESULT AND DISCUSSION:

5.1 Urbanisation Levels and Growth Trends:

According to the provisional figures of census of India, 2001, the urban population of India and Tamil Nadu are 285.4 and 27.48 million respectively. Tamil Nadu thus accounts for 6% of the country's total population and 9.6% of country's urban population. Tamil Nadu ranks first in urbanisation among the fifteen major States in the country. Urbanisation has been on the increase since 1901. Over a century period, since 1901 to 2001, it can be witnessed a gradual increase in the urbanisation levels and growth of urban population in Tamil Nadu, comparatively higher than the all India's level. At the beginning of this century, Tamil Nadu's population was 20.9 million, of which about 0.31 million was living in urban areas. Over the years, the share of urban population has gone up to 44 percent and stood

at 27.4 million. The last four decades saw an almost three and a half times increase in urban population of the state (from 8.99 million in 1961 to 27.48 million in 2001).

It can be seen from the table one that the urban population in the state has increased from 15.07% during the year 1911 to 34.15% during the 1991 census and further to 44.04% during 2001 census. The decadal growth of the urban population for the state during the period from 1991 to 2001 has shown a massive increase of about 44.06%. It is also clear from the Fig.2 that the highest levels of urbanisation are found in the districts of Cheenai, Coimbatore, Kanyakumari Districts whereas eleven and eight districts come under the high to moderate level of urbanisation respectively. Low levels of urbanisation are found in Dharmapuri, Tiruvannamalai, Villupuram, Peram balur, Ariyalur, Nagapattinam, Thiruvarur, Pudukkottai districts.

Table.1.0: Comparison of population Growth Rates in Tamil Nadu and India (1901-2001)

Year	India			Tamil Nadu		
	Urban Population (Millions)	Share of Urban Population (%)	Decadal Growth Rates (%)	Urban Population (Millions)	Share of Urban Population (%)	Decadal Growth Rates (%)
1901	2.72	14.15		25.8	10.85	
1911	3.15	15.07	15.51	25.86	10.29	0.36
1921	3.25	15.02	8.86	28.08	11.18	8.26
1931	4.23	18.02	23.4	33.47	11.99	19.12
1941	5.17	19.7	22.3	44.2	13.86	31.98
1951	7.33	24.35	8.39	62.4	17.29	41.4
1961	8.99	26.69	22.59	78.9	17.97	26.44
1971	22.46	30.26	38.64	109.1	19.91	38.22
1981	15.95	32.95	27.98	159.5	23.7	46.23
1991	19.07	34.65	19.59	217.2	25.71	36.09
2001	27.48	44.04	44.06	285.4	27.78	21.36

Source: Census of India, Town Directory.

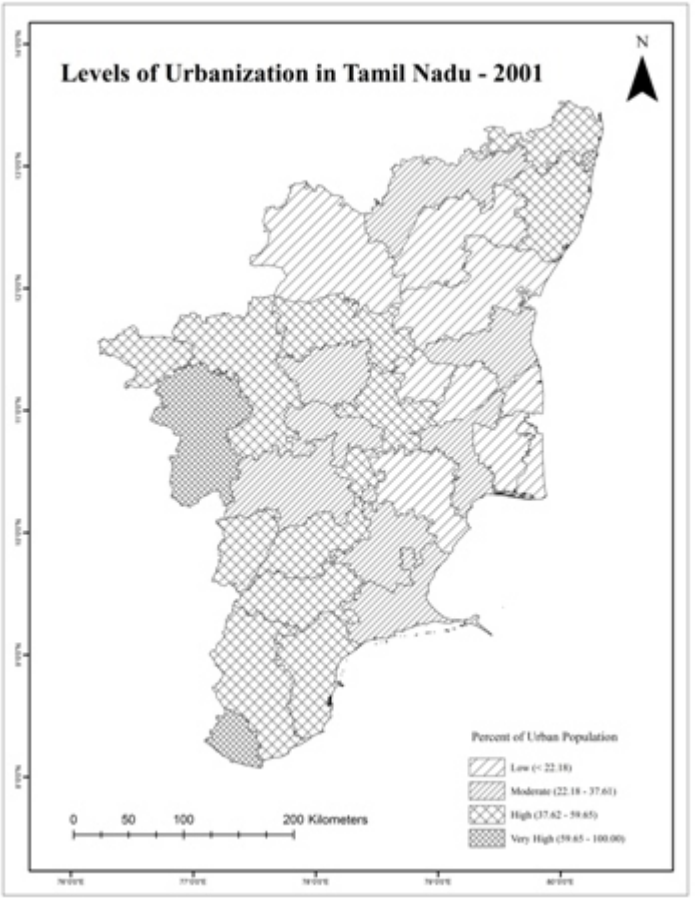
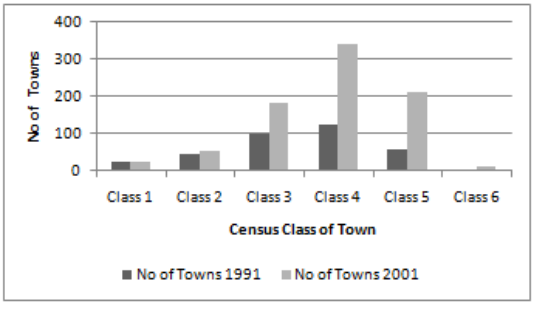


Figure.2.0: Level of Urbanisation in Tamil Nadu

5.2: City Size and Growth Relationship

The first impression on seeing the data is that the population of urban Tamil Nadu is increasing at a rapid pace and all the town except Vellore, Madurai, Valparai etc. are showing population growth. However, unlike rest of India this phenomenon is not restricted to small towns only and even towns or cities in Classes I, II or III show this decline in population. This does not follow the trend prevalent in the rest of India where bigger towns in categories I and II are increasing at the cost of smaller towns.

Figure.3.0: Growth in class town from 1991 - 2001



If we try to find a correlation between the city-size and its growth rate, we find that the correlation for all types of towns combined comes out to be 0.988. This shows a very, very high correlation and thus the hypothesis that city size growth is proportional to its growth population stands accepted.

Table.2.0: Growth Rate by Continuous Method

Class	Growth Rate (1991-2001)
I	21.96
II	44.2
III	31.42
IV	45.6
V	60.12
VI	17.44
Total	17.44

Source: Census of India, Town Directory.

If we calculate the growth rate of population by Continuous Method (Table N0 2.0) and look at individual classes, we find that classes I, II and III do not show any appreciable higher growth rates of population like is the case in the rest of India. Even in the other three categories, the rate of population growth is similar to that of the first three categories. In fact even a class I town like Madurai shows almost 1% decline in population.

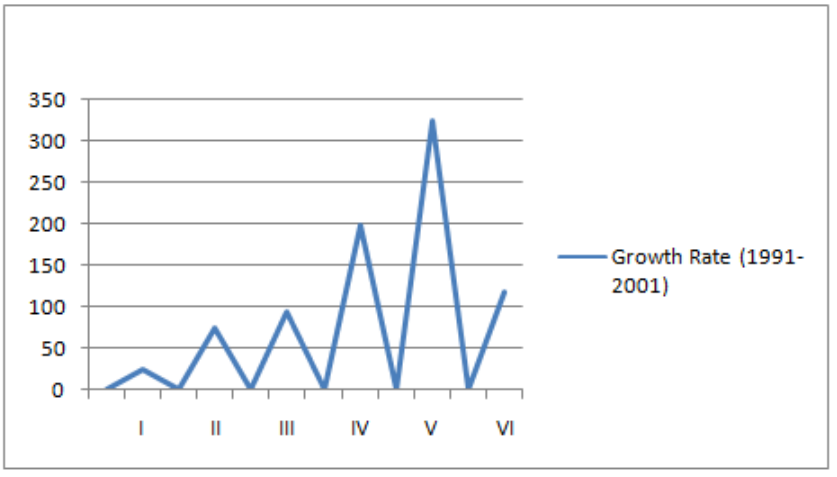
Table.3.0: Growth in Class Town and Population During 1991 to 2001

CLASS	No. of Towns(1991)	No. of Towns(2001)	Growth Rate (1991-2001)	Population 1991	Population 2001	Growth Rate (1991-2001)
I	26	26	0	9465998	11695734	23.55521309
II	47	56	16.07142857	2275580	3961861	74.10334948
III	99	183	45.90163934	2736498	5304766	93.85236167
IV	123	340	63.82352941	1603050	4776621	197.9708057
V	60	214	71.96261682	397967	1694359	325.7536429
VI	6	13	53.84615385	23121	50657	119.0951948
TOTAL	361	832	56.61057692	16502214	27483998	66.54733722

Source: Census of India, Town Directory

If we look at urbanisation or urban growth by instantaneous method, the results are staggering. While the growth of urban areas by this method is satisfactory for classes I, II and III towns, it raises exponentially in the rest three categories.

Figure.4.0: Growth Rate by Instantaneous Method (1991-2001)



Source: Census of India, Town Directory

This anomaly in Tamil Nadu can also be possible due to low growth rate of population and high out-migration from urban areas to Gulf Countries. Also the high literacy rate of Tamil Nadu is responsible for this phenomenon. The successful social security net of Tamil Nadu means that people living in smaller towns have access to basic amnesties and thus don't need to move to big cities. This also leads to a more balanced urbanisation. This phenomenon should be a subject of study for urban planners and whatever Tamil Nadu has done right to stop top heavy urbanisation should be applied in the rest of the country.

6.0: CONCLUSION:

Thus we can conclude that there is a high correlation between the population growth rate and city size as a whole. However, as a rule, the growth rate in classes I, II, and III pan out to be maximum while those at other three classes are much lower. The differences in growth rates between cities and different categories of towns (large, medium and small) are not very much significant. It means that the cities within themselves show very large variations. The statistical analysis shows that the size of town and city is a negatively related to urban growth rates. It is quite natural that as city grows it expands the economic base and activities of the cities leading to increased advantage to the trade and commerce as well as to industries from the agglomeration economy. But it cannot be sustained very long. The decline in growth rate will certainly set in with increase in the size of city in the long run. Hence, effort to restrict city size is not always necessary and it could even be detrimental to the economic growth at the early stages of economic development in a country. Therefore, cities should be allowed to grow naturally in order to reap the benefits of its growth momentum. In fact, the optimality of city size is elusive and each city could find its own in due course of time. However, this also means that these top towns have increased problems of over urbanisation. From housing to sanitation and over-crowding to traffic

congestions all negative aspects of urbanisation come within the spectrum of Urban Planning.

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