

Emerging Trends of Urbanization in India: An Inter-State Analysis from 1980 to 2011



Economics

KEYWORDS: Urban Growth, Urbanization, Economic Growth.

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ABSTRACT

The Indian economy has shown many interesting features in trends of urbanization in the last few decades of the 20th century. Although the basic structure has remained the same since independence, however with planned governmental interventions have made us witness some significant variations in the trends from the past. The economic reforms of 1990s have had additional impact on the trends and pattern of urban growth. As the country aspires for a new development regime in the coming years, it makes it imperative to study urbanization and its implication for present and future economic growth of the country. The objective of the study is to obtain a proper understanding of the emerging trends and pattern of urbanization and analyse the relationship between economic growth and urbanization in India. For the purpose of the study 24 major states of India across four time frames from 1981 to 2011 have been examined using regression analysis.

Introduction

Urbanization is a phenomenon describing a process of change that takes places when a country starts developing from a traditional rural economy into an industrial and service economy. It is the type and degree of economic activity in a country that helps to determine the level of economic growth and hence, further urbanization. The economic activities of a country can be classified into primary, secondary and tertiary and the nature of urbanization is dependent on the type of economic activity going on in the country.

Another measure of the level of urbanization that has been generally considered is the proportion of a country's total population living in the urban areas. Thus, in the demographic sense, urbanization has been defined as an increase in the proportion of urban population (U) to the total population (T) over a period of time. As long as U/T increases, there is urbanization (Bose, 1973). Urbanization can result from one or more of the following (Bhagat, 1992; Jack, 2006):

- Natural increase in urban population: when population growth rate is higher in urban areas than in rural areas.
- Rural to urban migration: when large numbers of people migrate from rural to urban areas due to better economic opportunities in the urban areas.
- Reclassification of rural areas as urban: this reclassification is done on the basis of certain norms, which include the level of population and the level of developmental activities.

According to Kingsley Davis, as quoted in Roy (1962) there are three phases in the process of urbanization. Phase one is the initial phase or the primary phase characterized by rural traditional society with predominance in agriculture and allied activities. Phase two is the acceleration phase or the secondary phase where basic restructuring of the economy and investments in social overhead capitals including transportation, communication takes place. In this phase, the proportion of urban population gradually increases from 30 percent to 60 percent or more and the dependence on primary sector gradually declines. Third phase is known as the modern or the western-type phase, where urban population exceeds 70 percent. At this stage, level of urbanization remains more or less the same. Rate of growth of urban population and total population becomes same at the third phase – this is atypical to most developed countries.

The objective of the study is to obtain a proper understanding of the emerging trends and pattern of urbanization of the major states of India from 1980 to 2011. An attempt has also been made to analyse the relationship between economic growth and urbanization in India. For the purpose of the study 24 major states of India and four time frames -1981, 1991, 2001 and 2011 have been analysed using regression analysis.

1.1 Trends in Urbanization in India

The Indian economy has shown many interesting features in its structure of urban growth and urbanization in the last few decades of the twentieth century. Although the basic structure has remained the same since independence however with planned central and state government interventions have to lead to some significant changes from the trends witnessed in the past. Alongside with the opening up of the economy since early 1990s has had additional impact on the trends and pattern of urban growth. As the country aspires for a new development regime in the coming years, it makes it imperative to study the trends and pattern of urbanization and its implication for present and future economic growth in the country.

The annual exponential growth rate of urban population during 1950's was 3.5 per cent. This was the highest the country had seen until that time and led to the emergence of theories of 'over urbanization'. Subsequently, this high growth rate has been attributed due to independence and partition of the country as also non-rigorous identification of towns and cities in the 1951 Census. After the formalization of the criteria for identifying urban centers in the 1961 census, resulted in a dramatic decline in urban growth figures. Understandably, the growth rate came down to 2.34 per cent in 1961. However, in the 1970s, following the same methodology saw a very high urban growth of 3.83 per cent, fuelling speculation that India was on the verge of an urban explosion. This did not stand for long since the growth rate came down to 3.21 per cent in the 1980s. It has gone down further to 2.73 per cent in 2001, which is the lowest in the post-independence period. As a consequence, the percentage of population in urban areas has gone up sluggishly from 17.3 in 1951 to 23.3 in 1981 to 25.72 in 1991 and then to 27.78 in 2001. Further, there also exist dramatic variations in urbanization across the states.

Table 1.1: Percentage and Growth Rate of Urban Population in India from 1981 to 2011

Census Year	Percentage of Urban Population to Total Population*	Annual Growth of population	Exponential of Urban
1951	17.29	3.47	
1961	17.97	2.34	
1971	19.91	3.83	
1981	23.34	3.21	
1991	25.72	3.09	
2001	27.78	2.73	
2011	31.16	2.90	

Notes: * Level of Urbanization in India

Sources: Census of India, 1981, 1991, Paper-2; Census of India, 2001; Provisional Population Totals, Census of India, 2011.

Table 1.2: Urban Population of the States of India

S.No	States	1981	1991	2001	2011
1	Andhra Pradesh	12487576	17887126	20808940	28353745
2	Arunachal Pradesh	41428	110628	227881	313446
3	Assam	1782451	2487795	3389413	4388756
4	Bihar (incl. Jharkhand)	8718990	11353012	14675541	19658901
5	Gujarat	10601653	14246061	18930250	25712811
6	Haryana	2827387	4054744	6115304	8821588
7	Himachal Pradesh	325971	449196	595581	688704
8	Jammu & Kashmir	1545245	1839400	2505309	3414106
9	Karnataka	10729606	13907788	17961529	23578175
10	Kerala	4771275	7680294	8266925	15932171
11	M.P.(incl. Chhattisgarh)	10586459	15338837	20152892	25996204
12	Maharashtra	21993594	30541586	41100980	50827531
13	Manipur	375460	505645	575968	822132
14	Meghalaya	241333	330047	454111	595036
15	Mizoram	121814	317946	441040	561977
16	Nagaland	120234	208223	342787	573741
17	Orissa	3110287	4234983	5517238	6996124
18	Punjab	4647757	5993225	8262511	10387436
19	Rajasthan	7210508	10067113	13214375	17080776
20	Sikkim	51084	37006	59870	151726
21	Tamil Nadu	15951875	19077592	27483998	34949729
22	Tripura	225568	421721	545750	960961
23	U.P. (including Uttaranchal)	19899115	27605915	36718656	47561624
24	West Bengal	14446721	18707601	22427251	29134060

Sources: Census of India, 1981, 1991, Paper-2; Census of India, 2001; Provisional Population Totals, Census of India, 2011

Table 1.3: Gross State Domestic Product (GSDP) Across States in Rs. Crore

S.No	States	1981	1991	2001	2011
1	Andhra Pradesh	9424	15897	145185	405046
2	Arunachal Pradesh	123	285	1997	5666
3	Assam	2744	3942	36642	80172
4	Bihar (incl. Jharkhand)	7738	11295	88510	235699
5	Gujarat	8126	11663	113277	398884
6	Haryana	3519	6459	16441	59907
7	Himachal Pradesh	841	1290	15786	41939
8	Jammu & Kashmir	1221	1701	16531	40771
9	Karnataka	6617	11494	105560	286410
10	Kerala	4280	6251	75309	210107
11	M.P. (incl. Chhattisgarh)	8047	12072	109141	285964
12	Maharashtra	17064	29986	252438	787426

13	Manipur	232	385	3261	7535
14	Meghalaya	209	375	4033	11085
15	Mizoram			1733	5017
16	Nagaland	140	268	3641	9379
17	Orissa	3717	5457	44932	130669
18	Punjab	5473	8795	71146	156454
19	Rajasthan	5018	8895	89869	227824
20	Sikkim	56	157	1040	5148
21	Tamil Nadu	8931	14373	139842	416549
22	Tripura	284	511	5878	15645
23	U.P. (including Uttaranchal)	16035	25721	197808	481822
24	West Bengal	10133	17052	150867	339844

Sources: Ministry of Statistics and Programme Implementation report 2008 and 2010 and Government of India: State Domestic Report, 2012-13.

For understanding the dynamics of urbanization for a country like India it is pertinent to study the changes in the trends of urbanization across the states. The regional variation in the distribution or urban population has been studied across the 24 major states of India and it interesting to know that among the states, Maharashtra has the highest urban population as well the highest GSDP and the states with lowest GSDP and urban population are Arunachal Pradesh and Sikkim.

2. Data and Methodology

The study is based on secondary data. The basic data on urban population and total population is obtained from various Census of India publications for the years 1981, 1991, 2001 and 2011 and data on per capita gross state domestic product is obtained from Ministry of Statistics and Programme Implementation (Mospi) and various reports of Reserve Bank of India. We have used both cross-sectional and time-series data and formulated a panel for our analysis. Gross State Domestic Product (GSDP) has been taken as an indicator of economic growth for studying the relationship between economic growth and urbanization in India. The GSDP data for 1981-1982 and 1991-1992 uses base year prices of 1980-81, for 2001-2002 uses base year prices of 1999-2001 and for 2011-2012 uses base year prices of 2004-05.

The urban population has been computed using the Census data and the most widely used index, degree of urbanization: $U = (U/P) * 100$ where, U and P represent the urban and total population of a country. Using regression analysis we have formulated the following econometric model for our study. We have also considered the square of the Time period (t^2) to study the increasing trend of urbanization over years.

The basic multiple regression equation takes the form $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$

Where,

Y = Urban Population (UBPOP);

X_1 = Time (t)

X_2 = Time2 (t^2)

X_3 = GSDP

$UBPOP = \beta_0 + \beta_1 (\text{Time}) + \beta_2 (\text{Time}^2) + \beta_3 (\text{GSDP})$

It examines the direct impact of explanatory variables i.e., time (years) and economic growth (GSDP) on the dependent variable i.e., urban population (UBPOP).

3. Empirical Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.835 ^a	.696	.686	6525259.803
a. Predictors: (Constant), GSDP, Time, Time2				

The model summary gives the following interpretations about our model:

- Urban Population (UBPOP) is the dependent variable and Time (t), Time2 (t²) and GSDP are the independent variables.
- R-Square shows the proportion of the variation in the dependent variable (UBPOP) that is explained by variations in the independent variables. Here R Square (=696) shows that 69.6% of the variation is explained.
- Adjusted R-square, which in this case is .686, shows the proportion of the variance in the dependent variable (UBPOP) that can be explained by variation in the independent variables. It has critical values lie below 1 and the closer it is to 1, the more it is preferred. It is summary measure of Goodness of Fit, and is superior to R-Square because it is sensitive to the addition of irrelevant variables.
- The dispersion of the dependent variable estimate around its mean (the Standard Error of the Estimate) is 6525259.803.

3.1 Interpretation of the Coefficient estimates

Coefficients						
Model B		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		Std. Error	Beta			
1	(Constant)	-157529.935	3.787E6		-.042	.967
	Time	8.691E6	3.469E6	.838	2.505	.014
	Time2	-2.285E6	699534.991	-1.122	-3.267	.002
	GSDP	86.759	6.361	.977	13.639	.000
a. Dependent Variable: UBPOP						

The p-value is observed for this test (Column “Sig.”) must be below 0.05 for 95% confidence in the value of the estimated coefficient. Since, Sig. of Time is .014, Sig. of Time2 is .002 and Sig. of GSDP is .000. We find that all of our variables are significant.

UBPOP= -157529.935 + 8.691E6 (Time) + (-2.285E6) (Time2) + 86.759 (GSDP)

- Coefficient of Time (t) is 8.691E6, which implies a positive relation between time and urban population.
- Coefficient of time2 (t²) is (-2.285E6), which implies a negative relation between time2 and urban population.
- Coefficient of GSDP is 86.759, which implies a positive relation between GSDP and Urban Population.

The standardized coefficient Beta is highest for GSDP (=977) among all three explanatory variable. This implies that **GSDP is the most important variable**. The standardized coefficient Beta for time is .838. This implies that time is also an important variable.

The standardized coefficient Beta for time2 is -1.122. This implies that time2 is least important variable. There is high possibility that removing time2 (t²) will leave the regression of urban population unchanged, in that case we can call time2 (t²) “redundant variable”.

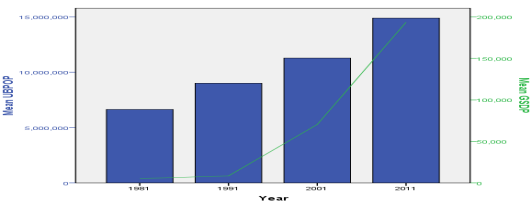
4. Summary and Conclusions

In this study, we studied the trends in urbanization in India and the relationship between economic growth (GSDP) and urbanization in India.

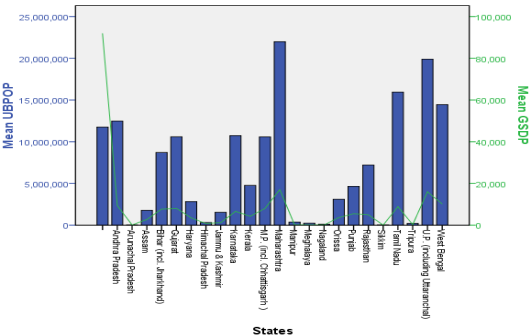
We used a multiple regression analysis to estimate the effect of time (years) and economic growth (GSDP) on the urban population in India. The results were as follows:

- We found that GSDP has significant affect on urban population.
- 7.4% of variations in urban population is explained by variation in Time (t).
- Time and GSDP, both are positively correlated with urban population in multiple regression analysis.

4.1 Relationship between Economic Growth and Urbanization

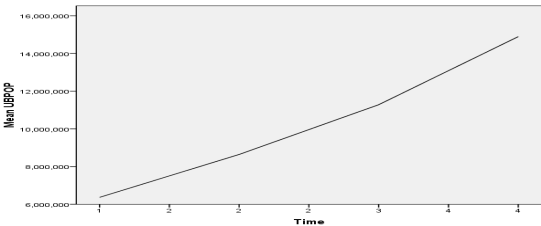


As we can see from the above graph that as Gross State Domestic Product (GSDP) is increasing, Urban Population (UBPOP) is also increasing. This shows that **GSDP and UBPOP are positively correlated. 62.2% of the variations in UBPOP are explained by variations in GSDP.**



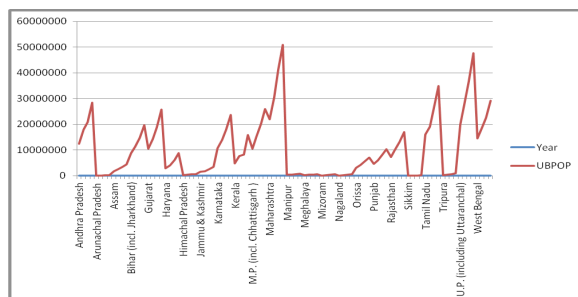
The above graph shows the relation between mean Urban Population (UBPOP) of major states of India and GSDP. **UBPOP and GSDP are positively related.** The states, like Andhra Pradesh, Bihar, Haryana, Maharashtra, Gujarat, Madhya Pradesh, Punjab, Kerala, Orissa, Uttar Pradesh, have high GSDP and also have high urban population. And the states, like Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Mizoram, Tripura, Sikkim, have low GSDP and also have low urban population. **Maharashtra has the highest GSDP and urban population; and Arunachal Pradesh and Sikkim have the lowest GSDP and urban population.**

4.2 Trends and Patterns of Urbanization in India



The above graph shows the increasing trend between the mean urban population (UBPOP) of India and time (t). We can see that over time the urban population of India is increasing. This shows a **positive relation between the mean urban population (UBPOP) and time (t)**. As we can see that from 1981 to

2001 the urban population is increasing but at a slow rate. There was a steep rise in urban population from 2001 to 2011 due to industrialization and infrastructure investment.



There are significant regional variations in the distribution of urban population. There is a massive increase in urban population from 1981 to 2011 in Maharashtra, Uttar Pradesh, Gujarat, Tamil Nadu, Karnataka, West Bengal, Rajasthan, Andhra Pradesh, Madhya Pradesh (including Chhattisgarh) and Bihar. And also there is increase in urban population in Punjab, Kerala, Orissa, Haryana and Assam But the states like Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura showed a very less increase in urban population from 1981 to 2011. **The highest increase in urban population is in Maharashtra and the lowest is in Arunachal Pradesh and Sikkim.**

REFERENCE

- Bhagat, R.B., (1992), "Component of Urban Growth in India with reference to Haryana: Findings from Recent Census", Nagarlok, Vol. 25, No.3, pp. 10-14. | Bhagat, R.B., and Mohanty, S., (2009), "Emerging Pattern of Urbanization and the Contribution of Migration in Urban Growth in India", Asian Population Studies, Vol. 5, No. 1 | Bhagat, R.B., (2011), "Emerging Pattern of Urbanization in India", Economic and Political Weekly, Vol XLVI No 34, pp. 10-12 | Bose, A., (1973), "India's Urbanization 1901-2001" Second Edition, Institute of Economic Growth, Tata McGraw-Hill Publications Company Limited, New Delhi. | Census of India Publication, (1991) and (2001), "Total population and Rural-Urban Population". | Census of India Publication, (2011), "Rural-Urban Distribution of Population, Provisional Population Totals", Government of India, New Delhi. | Davis, K., (1962), "Urbanisation in India - Past and Future", in Turner, R. (ed.) India's Urban Future, University of California Press, Berkeley. | Henderson, V., (2003), "The Urbanization Process and Economic Growth: The So-What Question", Journal of Economic Growth, Vol.8, No.1, pp. 47-71. | Jack, M., (2006), "Urbanization, Sustainable Growth and Poverty Reduction in Asia", Institute of Development Studies, Asia 2015. | Kundu, A. and Gupta, S., (1996), "Migration, Urbanization and Regional Inequality", Economic and Political Weekly, Dec. 28, pp. 3391-3398. | Kundu, A., (2011), "Trends and Processes of Urbanization in India", Urbanization and Emerging Population Issues- 6, New York. | Moomaw, R. L. and Shatter, A. M., (1996), "Urbanization and Economic Development: A Bias Towards Large Cities?" Journal of Urban Economics. 40, pp. 13-37, Article No. 0021. | Ministry of Urban Development, Government of India, (2001), Urban Scenario, Urban Growth, New Delhi, downloaded from <http://www.urbanindia.nic.in/> and accessed on September 2012. | Sivaramakrishnan, K.C., Kundu, Amitabh and Singh, B.N. (2005): "Handbook of Urbanization in India: An Analysis of Trends and Process", New Delhi: Oxford University Press. | 5.1 Data Sources: | - Census of India 1981, 1991, 2001 and 2011. | - GSDP at Constant Prices 1981-82 and 1991-92 http://mospi.nic.in/SDP_%201980_81_4june08.pdf | - GSDP at Constant Prices 2001-02 http://mospi.nic.in/mospi_new/upload/statewise_sdp1999_2000_9sep10.pdf | - GSDP at Constant Prices 2011-12 <http://www.delhi.gov.in/wps/wcm/connect/2fa0ea804efc4bceb075b9fe99daf05a/SDP+Report+2012-13.pdf?MOD=AJPERES&mod=-381532067&CACHEID=2fa0ea804efc4bceb075b9fe99daf05a> |