
Research Perspective

URBANISATION IN KARNATAKA: TREND AND SPATIAL PATTERN

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Karnataka is the seventh largest state in India with 38.67% of urban population as of 2011. With 1 out of every 7 people in Karnataka living in Bangalore, it addresses pertinent questions as to how much of this growth is contributed by various regional pockets. This paper aims to identify regional imbalances in urban growth in Karnataka from 1991 to 2011 at the regional, divisional and district level and to examine the distribution of urban population across cities during the same period. It uses secondary data from the Census of India to compute measures of percent urban population, urban rural growth differential (URGD), Gini coefficient/Lorenz curve and primacy index (PI). Results show that Karnataka exhibits a fluctuating trend of urbanisation with a high regional variation and a high urban primacy. Disparities exist in urban growth with Bangalore being the most urbanized district (90.94%) and Kodagu the least (14.61%). Udupi and Dakshina Kannada districts were urbanizing faster than 2.5% in 2001-2011 while Uttara Kannada, Raichur and Gadag have registered very slow growth. Seventy percent of urban population lives in 10% of towns/urban agglomeration, with Bangalore being the primate city (IPI = 3.09). There is positive association between city-size and growth rate during 2001 to 2011. Thus, urbanization in Karnataka reflects lopsided economic developments across the state and needs special attention.

INTRODUCTION

Literature on urbanisation in India, points to regional variations, a fluctuating trend across years, and a concentration of urban population in large cities (Tumbe, 2016; Bhagat, 2011; Sivaramakrishnan et al. 2007; Kundu, 2006; Kurien, 2000). Regional variations in concentration of urban population is reflective of certain developmental aspects, and is an important indicator of regional disparity (Kurien, 2000). These variations and fluctuating pattern of urban growth is attributed to migration, urban boundary expansion, and natural increase. Studies link urbanisation with economic growth such as industrial growth in Maharashtra during the post liberalisation period (Sivaramakrishnan et al., 2007) and the growth of tertiary sector in case of Karnataka (Sastri, 2006). Urban growth is also linked with high per capita income (Sivaramakrishnan et al., 2007) and with employment (Ramaswamy 2007). Bhattacharya (1998) shows a positive relation between urban population and human development index among the high income districts of West Bengal. However, Kurien (2000) points to the importance of regional studies at the intra-state level as each of the high urban states has a metro city which contributes significantly to its urban population. In this context, this study examines the process of urbanisation in Karnataka. This paper aims to 1) identify regional imbalances in urban growth in Karnataka from 1991 to 2011 at the regional, divisional and district level and 2) examine the distribution of urban population across cities during the same period.

METHODOLOGY

The study is based on secondary data on population obtained from the Census of India 1971, 1991, 2001 and 2011. Measures such as percent urban, urban rural growth differential (URGD), and

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coefficient of variation (CV) are used to examine the trend and regional pattern of urbanisation at division (5) and district (30) level. Further, to examine the distribution of urban population across cities, the Gini coefficient (G) as well as the primacy index (PI) are computed.

FINDINGS

Trend of Urbanisation

Table 1 presents a comparative picture of urbanization in Karnataka and India since 1901 through different measures of urbanisation. It shows that level of urbanisation in Karnataka has always been higher than the country level. The proportion of population living in urban area has always been increasing since 1911 for India and the state, except for slight decline in Karnataka during 1951-1961 (22.95% to 22.3%). However, when the population of Karnataka is corrected for the declassification of towns as per new definition of urban adopted in 1961, the per cent urban in 1951 declines to 20.78%. Similarly for India, the revised estimates (based on Puri, 1986) also indicate an overestimation of urban population in 1951. Regarding URGD, both Karnataka and India experienced more growth in urban population than the rural population since 1911. URGD was recorded highest during 1941-1951 followed by 1971-1981 when urban population was growing 2% faster than rural population. During the last decade, the population in urban and rural Karnataka increased by 5.6 million and 2.5 million respectively, with the URGD crossing 2% compared to 1.6 in India.

Table 1
Trend of Urbanisation in India and Karnataka, 1901 – 2011

Year	Total Population (Million)		Urban Population (Million)		Percent Urban		Urban Rural Growth Differential (URGD)	
	India	Karnataka	India	Karnataka	India	Karnataka	India	Karnataka
1901	238	13	25	1.6	10.85	12.59		
1911	252	13.5	25	1.5	10.29	11.61	-0.58	-0.92
1921	251	13.3	28	1.8	11.18	13.8	0.92	1.98
1931	278	14.6	33	2.2	11.99	15.35	0.8	1.25
1941	318	16.2	44	2.7	13.86	17	1.66	1.22
1951	361	19.4	62 (58)	4.4 (4.0)	17.29 (16.19)	22.95 (20.7)	2.62 (1.8)	3.75 (2.48)
1961	439	23.5	78	5.2	17.97	22.33	0.47 (1.26)	-0.36 (0.92)
1971	548	29.2	109	7.1	19.91	24.31	1.26	1.11
1981	683	37.1	159	10.7	23.34	28.89	2.03	2.35
1991	846	44.9	217	13.9	25.7	30.92	1.28	0.97
2001	1028	52.8	286	17.9	27.81	33.99	1.08	1.4
2011	1210	61	377	23.6	31.14	38.67	1.6	2.03

Note: Numbers in parentheses are revised figures after correcting for declassification of towns as per modified definition of urban in 1961.

Source: Authors' computation based on Census of India, 2001 [Table A-2: Decadal Variation in Population Since 1901, Statement 4 (Urban Population), Statement 8 (Rural Population)], Census of India 2011 [Primary Census Abstract], and Puri (1986).

Table 2

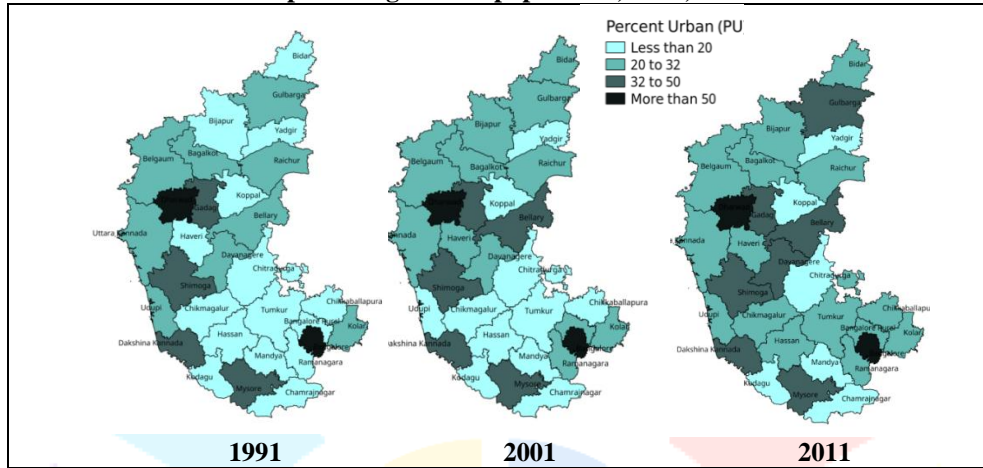
Level of Urbanisation across district, division and region of Karnataka, 1991-2011

Sl. No.	Administrative Division & Districts	% Urban			URGD	
		1991	2001	2011	1991-2001	2001-2011
A	North Karnataka Region	25.84	27.97	29.39	1.27	0.69
I	Gulbarga Division	23.71 (25.80)	26.49 (27.64)	27.88 (27.78)	1.48	0.70
1	Bidar	19.57	22.96	25.01	2.03	1.13
2	Raichur	24.56	25.20	25.42	0.34	0.12
3	Koppal*	15.46	16.58	16.81	0.84	0.17
4	Bellary	31.16	34.87	37.52	1.68	1.15
5	Gulbarga	26.98	31.71	32.56	2.29	0.39
6	Yadgir**	16.07	17.05	18.79	0.71	1.18
II	Belgaum Division	27.50 (41.49)	29.18 (38.01)	30.66 (36.62)	0.82	0.71
7	Belgaum	23.49	24.03	25.34	0.30	0.71
8	Bagalkot*	27.68	28.97	31.64	0.64	1.26
9	Bijapur	19.77	21.92	23.05	1.31	0.65
10	Gadag*	34.68	35.21	35.63	0.23	0.18
11	Dharwad	52.53	54.97	56.82	0.99	0.75
12	Haveri*	16.05	20.78	22.25	3.16	0.87
B	South Karnataka Region	35.47	39.25	46.06	1.62	2.79
I	Bangalore Division	42.40 (71.71)	46.99 (66.14)	54.29 (60.78)	1.86	2.93
13	Chitradurga	16.57	18.07	19.86	1.05	1.17
14	Davanagere*	28.81	30.32	32.33	0.72	0.94
15	Shimoga	32.83	34.76	35.59	0.87	0.36
16	Tumkur	16.57	19.62	22.36	2.06	1.65
17	Bangalore	86.16	88.11	90.94	1.75	3.03
18	Kolar	28.24	29.16	31.25	0.45	0.99
19	Chikkaballapur**	17.38	19.24	22.40	1.24	1.92
20	Bangalore Rural	19.53	22.60	27.12	1.85	2.42
21	Ramanagara**	17.07	20.87	24.73	2.48	2.20
II	Mysore Division	21.94 (38.29)	22.95 (39.82)	26.10 (40.66)	0.59	1.70
22	Chikmagalur	16.89	19.52	21.05	1.77	0.94
23	Mandya	16.23	16.03	17.08	-0.14	0.76
24	Hassan	17.37	17.70	21.21	0.22	2.25
25	Kodagu	15.96	13.74	14.61	-1.75	0.71
26	Mysore	35.79	37.19	41.50	0.60	1.81
27	Chamarajanagar*	14.00	15.34	17.14	1.07	1.33
C	Coastal Region/Division	27.00 (16.73)	30.33 (28.43)	37.18 (25.43)	1.63	3.07
28	Uttara Kannada	24.14	28.66	29.15	2.33	0.24
29	Udupi*	22.07	18.55	28.37	-2.18	5.53
30	Dakshina Kannada	32.21	38.43	47.67	2.73	3.78
	Karnataka	30.92	33.99	38.67	1.40	2.03

Note: The number of districts increased from 20 in 1991 to 27 in 2001 to 30 in 2011. *New districts formed after 1991 census; **New districts formed after 2001 census; Divisional CV in parentheses

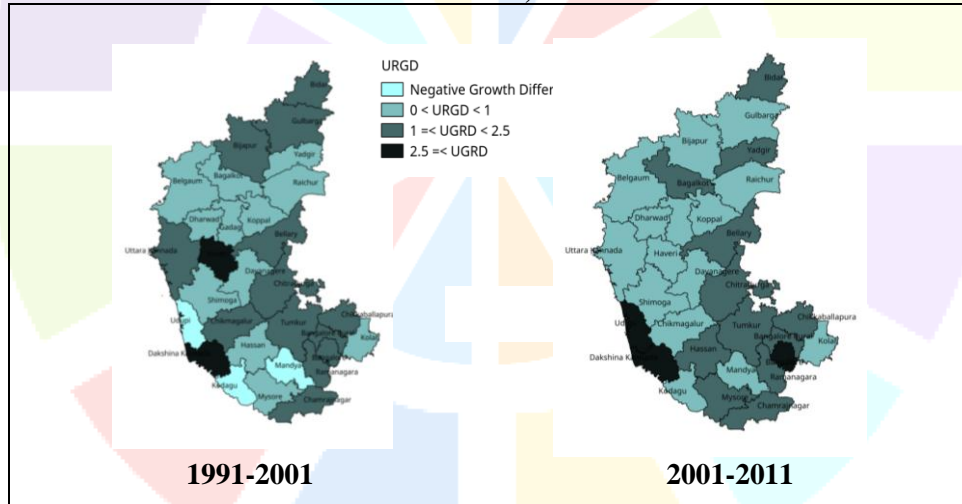
Source: Computed from Census 1991, 2001 and 2011

Figure 1
District wise percentage urban population, 1991, 2001 and 2011



Source: Computed from Census 1991, 2001 and 2011

Figure 2
District wise URGD, 1991 to 2011



Source: Computed from Census 1991, 2001 and 2011

Regional Variation in Urbanisation

The state of Karnataka is comprised of 30 districts which are grouped into five divisions and three regions namely, North Karnataka (Belgaum and Gulbarga Divisions), South Karnataka (Bangalore and Mysore Divisions) and Coastal Karnataka. At the regional level (Table 2), South Karnataka (47%) has always been the most urban, followed by Coastal Karnataka (37%) and North Karnataka (29%). Intra-divisional variations in urban population (Table 2) indicates highest disparity in Bangalore Division (54%) followed by Belgaum Division (31%). However, the disparity has declined in Bangalore and Belgaum divisions from 1991 to 2011, while it has increased in Mysore, Coastal and Gulbarga divisions. At the district level (Figure 1) Bangalore is

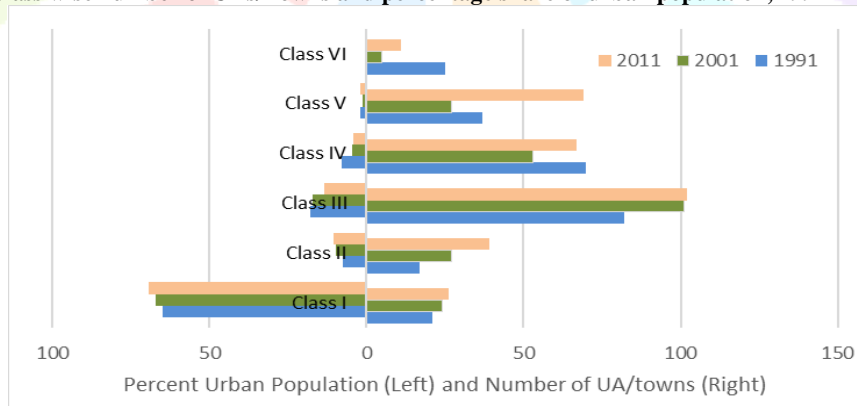
the most urbanised district with 90.94% urban population while on the other hand, Kodagu is the least urbanised district (14.61%) in 2011. Bangalore and Dharwad are the only districts where more than half of the district population lives in urban area in all three census - 1991, 2001 and 2011.

The trend across the two decades shows that the pace of urbanisation in Karnataka was more during 2001-2011 (2.03) compared to the previous decade 1991-2001 (1.40). Coastal (3.07) is the fastest growing region, followed by South Karnataka (2.79) and North Karnataka (0.69). However, only 17 out of 30 districts (Figure 2), most of these from the South and Coastal regions, experienced a higher pace of growth during 2001-2011 compared to previous decade, while districts of Gulbarga division experienced a slower pace of growth. Only Dakshina Kannada had a URGD of more than 2.5 in both the decades. It is interesting to note that Haveri district in Belgaum Division which had less than 20% urban population in 1991, experienced 3.16 URGD during 1991-2001, while Udupi district in Coastal Division which had less than 20% urban population in 2001 experienced the highest URGD of 5.53 in 2001-2011.

Urbanisation by Urban Size Class

Indian towns are classified into six-fold categories ranging from less than 5000 population (Class VI) to more than 100000 (Class I). Figure 3 gives the number of UA/Towns and its corresponding proportion of urban population for 1991, 2001 and 2011. The number of urban agglomerations and towns in Karnataka increased from 252 in 1991 to 314 in 2011. The number of Class I, Class II, Class III and Class V towns increased, while Class IV and Class VI towns decreased. Figure 4 shows that during 2001-2011, 64 per cent of class VI towns experienced negative growth while for other class size it varied from 4 to 9 per cent. Nearly one fourth of Class IV towns with a high growth rate are census towns which are in close proximity to large cities and industrial areas. Overall, with increase in town size, proportion of towns with negative growth decreases and vice versa.

Figure - 3
Class wise number of UAs/Towns and percentage share of urban population, 1991 – 2011



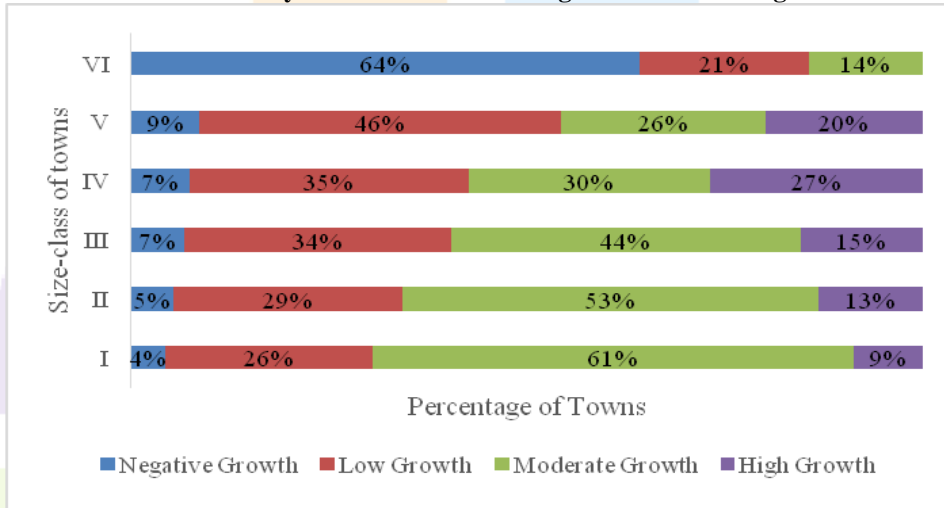
Note: An urban agglomeration has been classified according to the total population.

Source: General Population Tables, Census of India, Various Years.

The 147 small towns (population less than 20,000) accommodate less than seven per cent of urban population, while 24% of urban population reside in Class III towns and about 70% of total urban population live Class I towns only (Figure 3). The Lorenz curve (Figure 5) also shows that around 70% of the population lives in less than 10% of the UA/Towns. If compared with 1991, the concentration is increasing in Class I, Class II and Class V towns, while all other classes record reduction in share of population. This is reflected in the Gini Coefficient Index which was 0.68 in 1991 and declined slightly to 0.66 in 2001 but further increased to 0.72 in 2011.

Figure 4

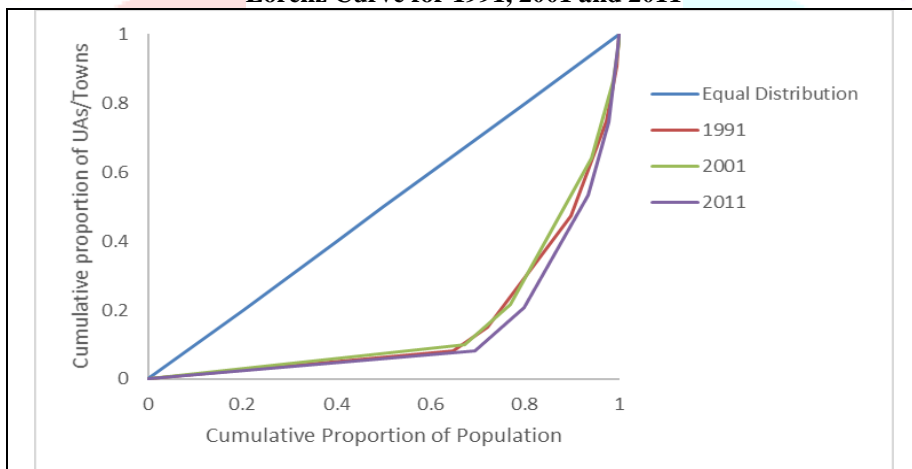
Distribution of towns by size-class and decadal growth rates during 2001 to 2011



Note: Negative growth: decadal growth < 0; Low growth: decadal growth < natural growth; Moderate growth: decadal growth ≤ 2*natural growth; High growth: decadal growth > 2*natural growth; where natural growth = 13.16%

Figure 5

Lorenz Curve for 1991, 2001 and 2011



Source: Author's calculations

Table 3 presents urbanisation by top 10 UAs in Karnataka. As of 2011, Bangalore is the only metropolitan city in Karnataka, the other populous urban regions being Mysore UA, followed by Hubli-Dharwad, Mangalore UA, and Belgaum UA. There is no change in the position of the first 8 UAs from 1991 to 2011, while there are slight changes in rest of the cities. In 1991-2001, three UA/Towns (Bangalore, Gulbarga, Shimoga) had more than 3% exponential growth rate and in 2001-2011 only Bangalore UA had a much higher rate (4.02). In 2001-2011, except for Bangalore, Mysore and Bellary most of the towns especially Shimoga (-1.89) experienced a lower pace of urbanisation when compared to the previous decade.

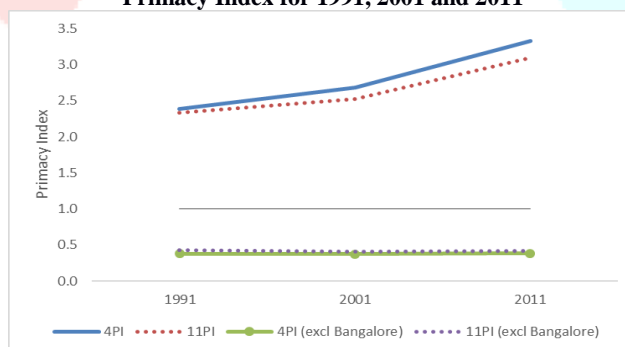
Table 3
Growth rates of top ten UA/towns of Karnataka, 1991 – 2011

Sl. No.	City Name	Population			Exponential Growth Rate		Difference in decadal Gr Rt
		1991	2001	2011	1991-2001	2001-2011	
1	Bruhat Bangalore UA	4130288	5701446	8520435	3.22	4.02	0.79
2	Mysore UA	653345	799228	990900	2.02	2.15	0.13
3	Hubli-Dharwad (MC)	648298	786195	943788	1.93	1.83	-0.10
4	Mangalore UA	426341	539387	623841	2.35	1.45	-0.90
5	Belgaum UA	402412	506480	610350	2.30	1.87	-0.43
6	Gulbarga UA	310920	430265	543147	3.25	2.33	-0.92
7	Davanagere (MC)	287233	364523	434971	2.38	1.77	-0.62
8	Bellary (MC)	245391	316766	410445	2.55	2.59	0.04
9	Bijapur (CMC)	193131	253891	327427	2.74	2.54	-0.19
10	Shimoga (CMC)	193028	274352	322650	3.52	1.62	-1.89

Source: Computed from Census of India Town Directories - 1991, 2001 and 2011

Disparity exists in the distribution of urban population across cities as well. The increasing polarised growth of Bangalore over the years, is reflected in Figure 6, where the four-city primacy index increased from 2.39 in 1991 to 3.33 in 2011 (i.e. in 2011 the population of Bangalore UA was more than three times that of the combined population of the next three large cities). Similar is the case with the eleven-city primacy index, which increased from 2.33 in 1991 to 3.09 in 2011. However, the four-city and eleven-city primacy index is less than one for the other large cities excluding Bangalore, indicating a more even distribution of population among them.

Figure 6
Primacy Index for 1991, 2001 and 2011



Source: Authors' own calculation

DISCUSSION AND CONCLUSION

India and Karnataka experience largely similar trend of urbanisation. However, during 1951-1961, though the numbers indicate a negative urban growth for Karnataka, in reality it experienced a positive growth. The negative growth was the effect of the adoption of a uniform definition of urban in 1961 (Puri 1986). Alike India, Karnataka also registers spatial variation in urbanisation at regional, divisional and district levels. The demarcation of regional boundaries is crucial for meaningful identification of disparities in urban population. When disparities are present, the lower level population parameters gets camouflaged by the higher regional level parameters. For instance, while South Karnataka Region (46.06%) is the most urbanised region in the state, it comprises the highest (Bangalore - 54.29%) and lowest (Mysore - 26.10%) urbanised divisions.

A few aspects of urban experience of Karnataka are provided here. During 1991-2001, Gulbarga division which is considered to be the most backward, experienced comparable growth in urban population. Dakshina Kannada district, which is part of the Western Ghats, has experienced high growth during both the decades, thus drawing attention to its probable impact on the environment. Though Bangalore has emerged as the primate city in the state, the intra-divisional disparity in Bangalore and Belgaum divisions has been declining owing to increase in district level urbanisation within the divisions.

A very close association between town size and growth type is seen, where large towns/cities show moderate to high growth, while small towns have registered either slow or negative growths indicating an out migration from these towns. The proximity of a town to large cities and industrial centres also influences its growth as seen in the case of small towns in Karnataka. We thus see regional variation in the components of urban growth, as indicated by Vaidyanathan (1969) and Bhagat and Mohanty (2009).

Thus, by examining urbanisation in Karnataka, this study shows that Karnataka exhibits a fluctuating trend in urban growth with intra-regional variations in distribution of urban population. This study also shows that in addition to nature of economy or migration contributing to urban growth, other factors like natural growth and change in urban definitions have also contributed to these urban trends. Urbanisation in Karnataka reflects lopsided economic developments across the state and needs special attention.

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