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Urbanization in India and West Bengal: Focuses an unequal growth of cities in the state of West Bengal

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Abstract

This study makes an attempt to focus on the nature, pattern and measure of uneven urbanization in West Bengal on basis of India census data, then find out the determinants and causes of urbanization. It also investigates the pattern of uneven growth of cities in West Bengal compared to other major urban agglomerations. The urban concentration index (CI) and rank size rule are used to analyze the urban hierarchy. Urbanization increased little bit from 27.9 per cent in 2001 Census to 31.8 per cent in 2011 Census. West Bengal, the emergence of a large number of census cities (CT) and the contribution to urban population growth brought significant changes in the nature of urbanization. The distribution of urban population is fairly uneven in West Bengal. The cities in this state more or less are in the form of primate cities with uneven growth of lower order urban centres. The rank size rule and distribution of urban population in study found that there is a linear relationship between actual population and expected population after plotting of data on logarithmic scale. Unless there is adequate dispersion of urban centers, Kolkata and some twenty cities will bear the tremendous burden of population.

Keywords: *Urbanization, urban agglomerations, growth of cities, rank-size rule, West Bengal.*

Introduction: Urbanization is the procedure by which the extension of the aggregate population in urban settlements is increased (Davis, 1965). Urbanization isn't just the aftereffect of industrialization but at the same time is the consequence of 'modernization'. The urban population is usually distributed among settlements of different size, class along a continuum from a small town to giant cities (Pacione, 2001). Urbanization includes many positive and negative scopes like employment facilities, services, better housing conditions, high standards of living, slum, sanitation, traffic problems, environmental pollution, health issues, etc.

The urban characteristics of West Bengal are notably its unique features. West Bengal has been endowed with rich environmental resources, strong people centric political governance, historic urbanization, high density patterns of population has given way to rich

rural traditional background that contribute to a vivid yet challenging picture of urbanization. It is the fact that the rate of urbanization in West Bengal has been slightly greater than that of India. But there has not been proper dispersal of urbanization in this state.

Dasgupta (1987), examines particular pattern of urbanization in West Bengal, the overwhelming role of the primate city, big gap between the former and the major cities in the region in terms of population size, economic, cultural activity and the predominantly rural character of the other areas in the region are much different in comparison with the decentralized form of urbanization in Punjab, Haryana, Kerala and some other states.

According to Bhagat (2004), the central area of the urban agglomeration of Kolkata, such as Kolkata and Howrah Municipal Corporation, shows one of the lowest growth rates during 1991-2001 compared to the 1981-1991 growth rates. He also noted that the peripheral areas show a reversal in the growth pattern in the 1991-2001 decade compared to the growth rates of the central areas. Bhagat (2004) observed that the small towns of West Bengal have grown much faster compared to other categories of towns and cities in the state due to agrarian reforms and a more equitable agrarian relationship could be attributed to this pattern of urbanization in the state of West Bengal.

Migration in West Bengal had started predominantly in the nineteenth century. The state had played an important role and had encouraged the migratory movement towards tea plantation, coal mines and different industries such as jute. According to Dasgupta (1988), the people from other states of India, especially from Orissa, Bihar and Uttar Pradesh migrated to West Bengal for performing these jobs since the end of the nineteenth century. Migration to urban areas is usually very much related to employment and earning opportunities in the formal and informal sectors in urban areas. Demographic processes like birth and death rate; and migration are the major determinants of population change in a geographical region. Based on state level migration studies, West Bengal is still in-migrating state; the out migration from West Bengal to other state is continuously increasing, and its share major proportion to total interstate out-migration of India.

Objectives: The present study, accordingly, focuses attention on the nature, pattern and measure of uneven urbanization in West Bengal on basis of India census then find out the determinants and causes of urbanization. It also investigates the pattern of unequal growth of cities in West Bengal compared with other major urban agglomerations.

Data Sources and Methodology: The present study is based on the secondary data that has been collected from the census of India 2001 and 2011. The spatial patterns that emerge from the maps are analyzed and interpreted by correlating the degree of urbanization with various demographic, socioeconomic and cultural variables. The level of urbanization expresses the percentage of urban population with respect to the total population during a determined time. Thus, level of urbanization = $(\text{Urban population} / \text{Total population}) * 100$. The urban concentration index (CI), rank size rule and breakpoint analysis are used to analyze the urban hierarchy at the national or macro level. It also tried to analyze urban

growth at the district level to see if that technique could be successfully applied at the district level.

The following is the formula to compute urban concentration

$$(CI) = x-y/2$$

Where, x is the per cent of the total urban area in a territorial division and y is the per cent of the total population located within its boundaries.

Rank size rule (G.K. Zipf, 1941) has been used to find out the relationship between the population size and of the settlement in a region with the help of following technique

$$Pr = P1/r$$

Where, Pr is Population of the rth rank city, Pi is Population of the large city; r is Rank of the city

Results and Discussion:

The Indian Scenario: India is a second largest populated country with a vast area of land. There are regional variations in terms of regional variations in land forms, natural resources, climate, vegetation and all. And all these variations are largely reflected in the pattern of urbanization. India was divided into 35 political units at the time of the 2011 Census. Urbanization in India has significantly started after the independence. Urban growth rate just after independence registered the highest due to the large number of Pakistan shelters (Kundu, 2011). In the 1951-1961 decades under the planned economy of industrialization, urbanization and economic growth had begun to start together (Bose, 1993).

The urban population of India at the beginning of the 20th century was only 25.85 million, constituting 10.84 per cent of the population of India in 1901; in 2011 it reached 31.2 per cent. Between 2001 and 2011, the degree of urbanization moved up by 3.4 percentage points from 27.8 per cent in 2001. In absolute numbers, the population in urban areas is indeed large 377.1 million in 2011. During the period from 2001 to 2011, the average growth rate of the urban population had increased to 3.38 per cent, which represents an estimated 92 million urban population due to globalization, attracted more employment opportunities and improving technical and vocational education along with more life safety and others (Kundu: 2011, Bhagat: 2011 and Misra: 2016).

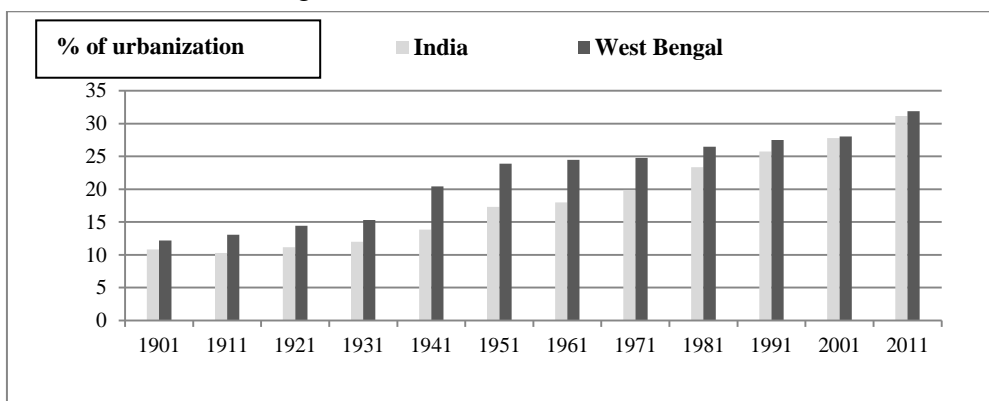


Fig.1 Level of urbanization in India and West Bengal, 1901-2011

The West Bengal Scenario: The decadal growth of urban population in West Bengal has been found to be a very lower than the other develops states in India. As per 2011 census, total urban population is 290,93,002 and level of urbanization little bit increased from 27.9 per cent in 2001 Census to 31.8 per cent in 2011 Census in West Bengal (Sarkar, 2017). The degree of urbanization for the state of West Bengal over time is not very significant (Chattopadhyay & Mukhopadhyay, 1996). But there is significant increase for some of districts viz., Howrah, Hugli, Darjeeling, Jalpaiguri and South 24 Parganas. In 2011, Kolkata was the most urbanized district followed Howrah, North 24 Parganas and Bardhaman. An important observation that depends on the annual growth rate of the urban population reveals that the growth of the urban population in the most urbanized districts has been low, while the less urbanized districts of the state have grown remarkably. It is notable that the districts of South 24 Parganas and Jalpaiguri confirm that highest increase in the percentage of urban population during the period of 2001-2011.

Table 1: District wise degree of urbanization in West Bengal, 2001 and 2011

	Districts	2001	2011	Changes
1	Bankura	7.37	8.36	+0.99
2	Bardhaman	36.94	39.87	+2.93
3	Birbhum	8.57	12.8	+4.23
4	Cooch Bihar	9.1	10.25	+1.15
5	Dakshin Dinajpur	13.1	14.13	+1.03
6	Darjeeling	32.34	38.99	+6.65
7	Howrah	50.36	63.6	+13.24
8	Hugli	33.47	38.62	+5.15
9	Jalpaiguri	17.84	27.0	+9.16
10	Kolkata	100	100	0
11	Malda	7.32	13.8	+6.48
12	Murshidabad	12.49	19.78	+7.29
13	Nadia	21.27	27.81	+6.54
14	North 24 Parganas	54.3	57.59	+3.29
15	Paschim Medinipur	11.9	12.03	+0.13
16	Purba Medinipur	8.29	11.65	+3.36
17	Purulia	10.07	12.75	+2.68
18	South 24 Parganas	15.73	25.61	+9.88
19	Uttar Dinajpur	12.06	13.8	+1.74
	West Bengal	27.9	31.8	+3.9

Source: Author's Calculation using Census of India 2001 and 2011.

Pattern of urbanization of West Bengal: The urbanization pattern of West Bengal can be divided into three broad categories according to the urbanization levels of the 19 districts in 2011.

High urbanization (More than 30 per cent): The six districts have the rate of urbanization above 30 percent are included in the highest category. The high urbanization level was recorded in the district of Kolkata, Howrah and North 24 Parganas Bardhaman, Darjeeling, Hugli due to the level of industrial development, their strategic location along the well-

developed roads and railway lines, high level social development due to high level of male and female literacy rates and so on.

Medium Urbanization (15-30 per cent): The four districts with urbanization rates vary between 15 and 30 percent are included in this category. The Medium urbanization level was registered in Nadia, Jalpaiguri, South 24 Parganas, and Murshidabad. A Medium level of urbanization was due to impact of urban shadow, urban to urban migration, the moderate level of industrial development, location along the major transport routes and establishment of some small and medium scale industries.

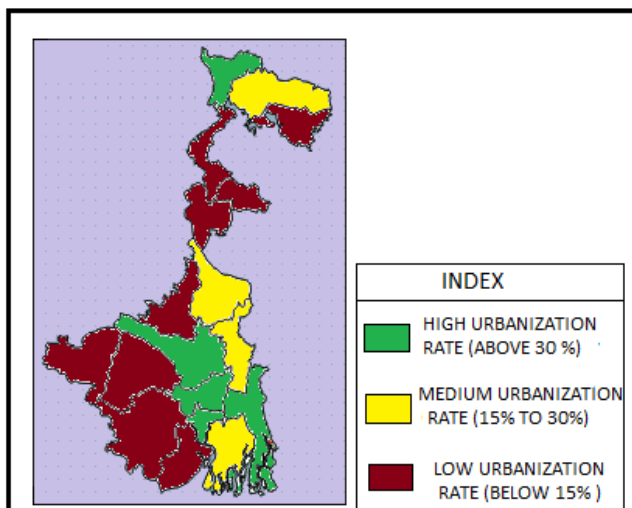


Fig.2 Pattern of urbanization among the districts of West Bengal, 2011

Low Urbanization (Less than 15 per cent): The nine districts with an urbanization rate of less than 15 percent are included in the low category. The low rate of urbanization was found in the districts of Birbhum, Malda, Uttar Dinajpur, Cooch Bihar, South Dinajpur, Bankura, Puruliya, East Mednipur and West Mednipur. The low level of urbanization among the districts is very poor due to lack of agricultural and industrial development, socio-cultural backwardness, low level of diversification, low level of literacy and the low level of employment opportunities.

Measurement of concentration of urban population in West Bengal: The distribution of urban population is fairly uneven in West Bengal. This is, in fact, one of the important features of urbanization in India (Singh, 1978). Let us look at the inequality of urbanization by one of the simplest methods of measuring the level of concentration of the urban population at the district level. It is clear that neither population nor the area is divided equally among the districts. The percentage of the total population located in a district has no relation to the percentage of the total area of its jurisdiction. The uneven concentration of the urban population is reflected in a discrepancy between the district's participation in the total area (see column 5 in Table 2).

Table 2: Measurement of concentration of urban population at district level in West Bengal, 2011

Districts	Total area km sq.	Urban area km sq.	Urban area % of total (x)	Population as % of total (y)	(x)-(y)	x-y/2	Urban population
	(1)	(2)	(3)	(4)	(5)	(6)	(6)
Bankura	6882	90.5	1.32	1.03	0.28	0.14	2,99,773
Bardhaman	7024	933.7	13.29	10.58	2.71	1.36	30,78,299
Birbhum	4545	120.4	2.65	1.54	1.10	0.55	4,49,448
Kolkata	185	185	100.00	15.46	84.54	42.27	44,96,694
Darjeeling	3149	153.5	4.87	2.50	2.37	1.19	7,27,963
Howrah	1467	431.1	29.39	10.57	18.82	9.41	30,74,144
Hugli	3149	328.4	10.43	7.32	3.11	1.56	21,28,499
Jalpaiguri	6227	367.3	5.90	3.64	2.25	1.13	10,60,351
Kooch Bihar	3387	68.9	2.03	0.99	1.04	0.52	2,89,434
Malda	3733	86.1	2.31	1.86	0.44	0.22	5,41,660
Murshidabad	5324	275.9	5.18	4.81	0.37	0.18	14,00,692
Nadia	3927	314.9	8.02	4.95	3.07	1.54	14,38,873
North 24 Parganas	4094	623.9	15.24	19.70	-4.46	-2.23	57,32,162
Purulia	6259	147.5	2.36	1.28	1.07	0.54	3,73,314
South 24 Parganas	9960	418.7	4.20	7.18	-2.97	-1.49	20,87,773
Uttar Dinajpur	3140	64.7	2.06	1.25	0.82	0.41	3,62,228
Dakshin Dinajpur	2219	31.3	1.41	0.81	0.60	0.30	2,36,295
Paschim Medinipur	9368	253.3	2.70	2.48	0.22	0.11	7,22,686
Purba Medinipur	4713	224.3	4.76	2.04	2.72	1.36	5,92,714
West Bengal N=	88752	3324.75	100	100	132.96	66.48	290,93,002

Source: Author’s Calculation using Census of India 2011

Unequal growth of cities in state of West Bengal: Geographically the state of West Bengal is located in eastern part of India and extends over an area of approximately 34,267 square miles. It is fourth-most crowded state of India. West Bengal is a densely populated state of about 91 million, of which approximately 29 million live in urban areas and percentage of the official urban population achieved 31.89 percent in 2011. The state also has the highest urban density of population of 6,789 people per km². In West Bengal, coming out of a large number of census towns (CTs) and contribution to the growth of urban population brought significant changes in the nature of urbanization. According to 2011 census confirms that West Bengal tops the list with total 782 census towns against the figure of 252 in 2001. Results show for the first time in 2011, the growth of census town (CT) bounces-up to a very significant high i.e. 209.52 per cent (Figure 3).

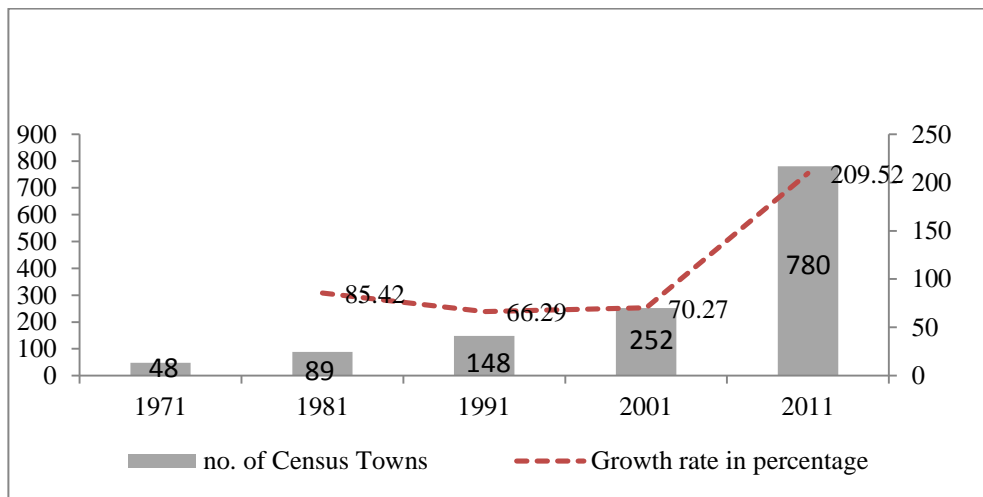


Fig. 3 Growth rate of Census Town in West Bengal

Since Independence, the urbanization pattern of West Bengal has been exceedingly gathered in and around Kolkata, Durgapur and Asansol urban industrial agglomerations of the state. This pattern has begun to alter with a new urban growth in areas far from the metropolitan domain, which can be defined as 'subaltern urbanization' (Denis, Mukhopadhyay, & Zerah, 2012). The existing literature on the broad pattern of urban size distribution in urbanization in the 20th century in West Bengal can be seen as a large metropolitan dominant city. The Kolkata Metropolitan Area (KMA) alone accounted for around 64 to 58 percent of the state's urban population between 1971 and 2001 respectively.

Urbanization of West Bengal can be clarified by representing the three different regions namely; (i) Kolkata Urban Agglomeration (KUA) and the surrounding region, (ii) Urban agglomerations distributed throughout West Bengal beyond KUA and (iii) individual cities and towns other than Urban Agglomerations. The characters of these three regions are different from each other and their growth and development processes are also diverse in different regions. The urban agglomeration of Calcutta or Kolkata is considered a large urban agglomeration and also shares almost half (48.44%) of the total urban population in this state. Similarly, Asansol urban agglomeration shares the 4.27 per cent of total urban population in 2011 followed by Siliguri and Durgapur urban agglomeration is 2.14 per cent and 2 percent respectively. The cities in this state more or less are in the form of primate cities with uneven growth of lower order urban centres. The rank size rule and distribution of urban population in study area showing the relation of the urban centers and their population size. It has been found that there is a linear relationship between actual population and expected population after plotting of data on logarithmic scale.

Table 3: Rank-size distribution of top five cities in West Bengal, 2011

Name of the town	Population (Pr)	Log (Pr)	Log (r)	Log (r) ²	Log (Pr)*Log (r)	Expected population Pr = P ₁ (r) ^b	Deviation of actual population from the expected population
Kolkata (1)	4496694	6.653	0.000	0.000	0.000	4271254	225440
Haora (2)	1077075	6.032	0.301	0.091	1.816	2098622	-1021547
Durgapur (3)	566517	5.753	0.477	0.228	2.745	1419843	-853326
Asansol (4)	563917	5.751	0.602	0.362	3.463	1064115	-500198
Siliguri (5)	513264	5.71	0.699	0.489	3.991	850791	-337527

Source: Author’s Calculation using Census of India 2011

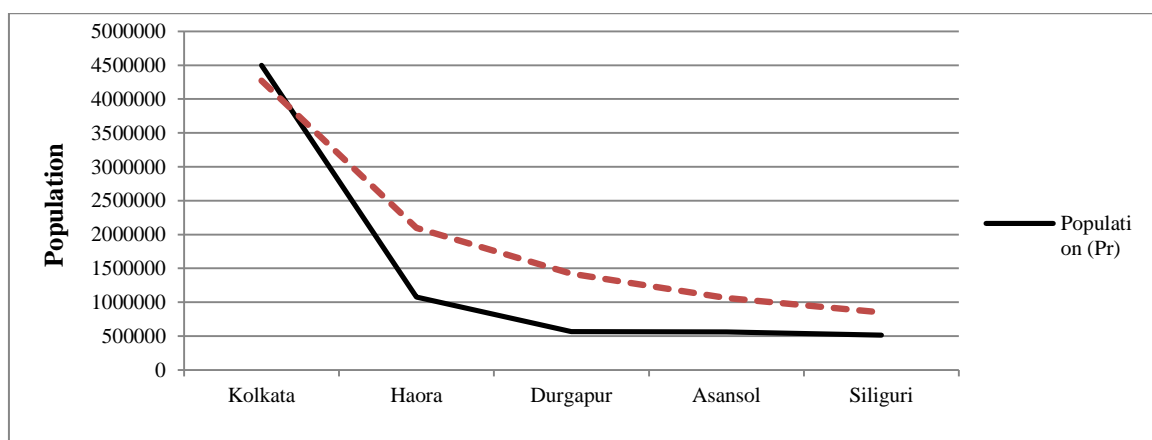


Fig. 4 Rank size distribution of selected urban centres in West Bengal, 2011

Conclusion: The present paper tries to attention on the nature, pattern and measure of uneven urbanization in West Bengal on basis of census of India. The Result shows that, level of urbanization in this state is very low however; the level of urbanization little bit increased from 27.9 per cent in 2001 Census to 31.8 per cent in 2011 Census. It is a fact that the urbanization in West Bengal has been slightly higher than national average. Results show for the first time in 2011, the growth of census town (CT) bounces-up to a very significant high i.e. 209.52 per cent. The distribution of urban population is fairly unequal in West Bengal. The uneven concentration of the urban population is reflected in a discrepancy between the district's participation in the total area. The rank size rule and distribution of urban population in study area showing the relation of the urban centers and their population size. It has been found that there is a linear relationship between actual population and excepted population after plotting of data on logarithmic scale. The urban agglomeration of Calcutta or Kolkata is considered a large urban agglomeration and also shares almost half (48.44%) of the total urban population in this state. But there has not been an adequate dispersion of urbanization in this state. Unless there is adequate dispersion

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of urban centers, Kolkata and some twenty state cities will bear the tremendous burden of population and this will lead to enormous damage to the environment and related issues.

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