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Spatial pattern of growth and concentration in West Bengal's class I cities

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Abstract

Urbanization in West Bengal is distinguished by the ceaseless concentration of population and specialized miscellaneous economic activities in class I cities (more than 100,000 population). Kolkata and its periphery are the thrust of West Bengal's urbanization. The result of the study shows that more than half (56 percent) of the population resided in class I cities in 1951. It grew from 70% in 1991 to 75% in 2001 but in 2011 it has declined to 62%. Bordering districts of Kolkata share a high percentage of the population as well as an ample number of class I cities in comparison to secluded districts from Kolkata. The rate of change of the population in Kolkata has enthusiastically downturned over the decennials. Lorenz curve and Gini Coefficient presented very few districts note an immense population and more districts share a small population in class I cities. Location Quotient also shows a high concentration of class I city population in a couple of districts.

Keywords: Class I cities, periphery, concentration, urbanization, spatial, Kolkata metropolitan, decade

Introduction

West Bengal was one of the leading states of the country in terms of the degree of urbanization before the time of independence but steadily, the state drop-down as the rate of urbanization decelerated. Despite the existence of the Kolkata metropolis, could not hold up over the last five decades due to partial economic development, spatial clustering of nonprimary activities, and inter-district discrepancy in development (Chatterjee 2013) [8]. Dasgupta (1987) [24] expressed that the pattern of urbanization in West Bengal was ultimately evolved by the policies of the Britishers. Since the British period, Kolkata has been a decisive role in every aspect. Although, Kolkata metropolitan area has not depreciated its urban economic (manufacturing and services) influence and population concentration in large cities around the ambit of Kolkata. However, after the decline of economic pull-off (shut down of many industries like Jute, and engineering) in the Haora-Hugli industrial belt, there is a gradual decline of population concentration in class I cities (83% in 1951 to 54% in 2011 in Haora and 75% in 2001 to 59% in 2011 in Hugli) while away from Kolkata Metropolitan area, the population has progressively increased. The growth rate of the population of Kolkata is reliably declined and even a negative growth rate (-2%) was registered in the last decade. The urbanization level in West Bengal is slightly higher in comparison to all India levels during the post-independence period. The process of urbanization in India as well as West Bengal is marked by a high concentration of population in comparatively larger cities. The class I cities shared 56% in 1951 and 62% in 2011 in West Bengal. But in 1951, 47% (one million and above) and only 19% in 2011 urban population resides in million cities in West Bengal. Retreating it in class I cities in India, it was 45% in 1951 and grew to 66% in 2011, while it was 19% in 1951, and augmented to 43% in 2011 in million cities.

Many Scholars (Ghose and Chakma 2014; Karmakar, 2015, 2016; Bagchi and Chaterjee 2015) [27, 25-26, 1] studied the concentration of the urban population in West Bengal. Therefore, they find out that the trend and pattern of concentration of urban population vary from region to region over the decades. Last Census 2011 divulges that the absolute urban population has grown more in contrast to the rural and slightly more than predicted in India (Bhagat 2011; Kundu 2011) [5, 9]. Urban population distribution across size classes in India is pigeonholed as top-heavy or oriented towards large cities (Kundu 2011) [9-10].

Correspondence Umar Rashid Dar Department of Physical Education, Govt. College for Women Pulwama J&K, India In the same way, across the different sizes of towns and cities, urban population distribution in West Bengal is characterized by asymmetrical and lopsided due to the different socio-economic status of the districts (Ganguly and Ghose, 2015; De and Banerjee 2014) [28, 3]. At the beginning of the 20th century, Kolkata was only one metropolitan city in India. Kolkata and Kolkata Urban Agglomeration which is dispersed widely over Nadia, Haora, Hugli, North and South 24 Parganas have the main supremacy and concentration of cities population in the state (Chatterjee 2010) [7]. Some of the previous studies argued that the process of urbanization in West Bengal got impulsion due to migration from neighboring countries especially from Bangladesh after independence (Sen 2015) [12]. Giri (1998) [16] also stated the same reason for population concentration in West Bengal that is pre- and post-Independence period, a huge number of migrations took place from the eastern part of Bengal resulting in high concentration in and around Calcutta (Now Kolkata) and in Asansol. Chatterjee (2013) [8] also specified that urbanization in West Bengal is mainly characterized by continuous concentration of population and different kinds of economic activities in class I cities. Though the urbanization in West Bengal is Kolkata-centric (Chakraborty S *et al*, 2015) [13] but other cities like Asansol, Darjiling, Siliguri, Raiganj, Berhampore, Kharagpur, Durgapur, Raniganj, Raiganj, Alipurduar, Habra and some other towns and cities also upheld a great role in the population share and distribution in West Bengal (Konar, 2009) [14].

Database and methodology Study Area

West Bengal is the fourth largest state of India covering an area of 88,752 sq. km (2.70 percent of India's total geographical area) and is the home of 91.28 million population as per the 2011 census. About 32% of the total population lives in urban areas and the remaining 68% in rural areas. West Bengal is located between 21° 25' North to 27° 13' North latitudes and 85° 48' East to 89° 53' East longitudes with three international boundaries i.e., Bangladesh, Nepal, and Bhutan. It is surrounded by the states of Sikkim in the north, Assam in the northeast, and Orissa, Jharkhand, and Bihar in the west. Total forest cover is about 11,879 (13.38%) sq. km as per the 2011 census. The landforms of West Bengal are characterized by Mountains, Hills, Plateaus, and Plains.

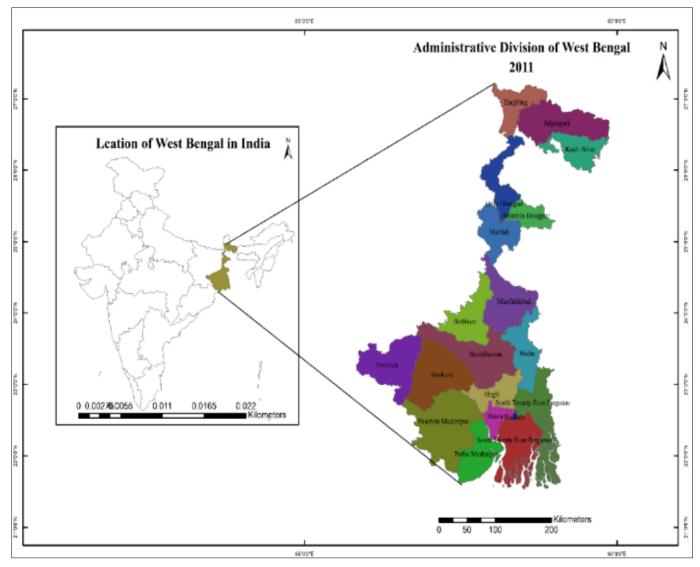


Fig 1: Location Map of West Bengal

Starting with Mountain in the northern plains of Doors and Terai, a relatively high Barind tract, a heaving lateritic plateau in the southwest, and a prevalent alluvial plain extending from North to South Bengal. The climate of West Bengal differs from tropical savanna in the southern part and humid subtropical in the north with five seasons (spring, summer, rainy season, short autumn, and winter). West Bengal is the territory of rivers. Three major (Ganga, Brahmaputra, and Subarnarekha) and numerous minor rivers drain this state.

Data sources

The data source is secondary and collected from the Town Directory, the Census of India 2011. This study is based on both state-level and district-level analyses of the trend of urbanization of class I cities from 1951 from 2011.

Data Analysis Method Statistical Processing of Data

- 1. Calculate percentage data for the trend of population share and growth of class I cities at the state and district level from 1951-2011.
- 2. Work out the concentration of population at the district level, the Statistical Techniques applied are-

Lorenz Curve is a measure of population concentration mainly used for the concentration of wealth. For the study, the population of class I cities of West Bengal for 2011 is ranked in terms of their increasing size population and the cumulative percent of cities population is plotted (on the Y-axis) against the cumulative percentage of districts (on the X-axis).

Gini Coefficient value is drawn from Lorenz Curve to assess income disparity in a given area. It is also used in social sciences for studying the concentration of the population on a temporal basis (Moskowitz, 2008) [23].

Gini Coefficient =
$$\frac{A}{(A+B)}$$

The Concentration Index for Class I city population in West Bengal (2011) is calculated through Location Quotient (LQ) which defines a ratio that compares a selected regional characteristic to the total of a reference region bringing out disparity levels.

Location Quotient (LQ) =
$$\frac{Pij/Pi}{Pj/P}$$

Where, Pij = number of person in jth category (class I city population) of area I (District 1, 2...n)

 $Pi=\sum Pij=$ Total population of all categories of area i (total size class population in district 1)

 $Pj = \sum Pij = \text{sum of persons of } j \text{ category in all } n \text{ areas i.e.}$, the population of a region under category j (total class I cities population in West Bengal)

P = sum of Pi in all areas that are the total population of the region in each category (total size class population in West Bengal.

Cartographic Representation of Data

Based on the calculation of the percentage of the population of class I cities and the growth rate from 1951 to 2011, the bar graph has been drawn for each decade and choropleth and circle cartograms for 2011 by using ArcGIS to illuminate the decadal and growth rate pattern of the districts. A line and Bar graph has also been prepared to represent the share and concentration of class I cities' population at the state and district level. The location and distribution of class I cites in the map are also prepared.

Results and Discussion

Level of population shares in class I cities in West Bengal Post-independence, the share of class I city's population perpetually increased till 2001, and the rate of change oscillated over the decades in West Bengal. From 1951 to 1981, only 4% and from 1981 to 2001, 14% population increased. In 1951, more than half (56 percent) and about 69% in 1991 of the State's urban population resided in class I cities. From 1951, with a minor increase in population, this has nearly persisted continually in the subsequent three decades (till 1981). In 2001, it increased to 75% (Threefourth of the total size class population). The basic cognition behind the increasing share of the population in class I cities are; the migration of the population from villages and towns (small, medium, and large towns) to cities because of jobs, better opportunities, the natural growth rate, myriad of satellite towns have crop up in the surroundings of pivotal cities, change of municipal boundaries of class I cities and upgradation of other towns into class I cities. But between 2001 and 2011 population of class I cities accomplished a declining trend due to de-urbanization in large cities (mainly Kolkata) because of the heavy cost of living, high population growth in other size class towns against class I cities, change of administrative boundaries of cities, etc. Notwithstanding this slight decline in 2011, it is worthwhile to mention that the increasing concentration of population in the cities has been a striking feature of West Bengal's urbanization during the last century. Though, the increasing concentration of population in cities sometimes gives the impression that cities are growing much faster compared to other size class towns but this is not true when across size class of cities and towns population growth rates are considered, in certainty, they are growing at about the same rate (Bhagat 2004) [6].

Table 1: Share and Growth rate of class I cities population in West Bengal, 1951-2011

Year	% Share of class I cities population	Year	Rate of change
1951	56.17	-	-
1961	56.33	1951-61	+33.45
1971	57.60	1961-71	+29.20
1981	60.25	1971-81	+33.31
1991	69.46	1981-91	+45.87
2001	74.30	1991-01	+42.41
2011	61.95	2001-11	+8.46

Source: Calculated by Author from Census of India, 2011

Though the growth rate has fluctuated throughout the decades. From 1951-1961, it was 33.45% and in 1981-1991, the growth rate raised to 46% but in 2001-2011, it has

revealed a reduction to 8.46% in class I cities in West Bengal.

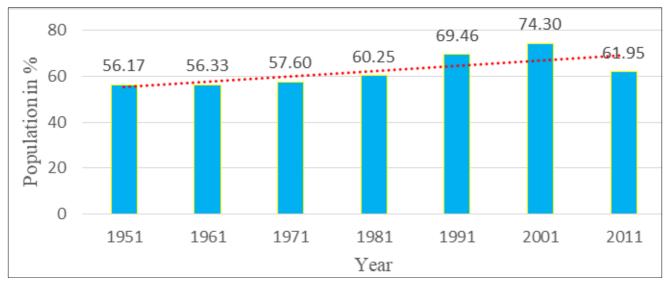


Fig 2: The percentage share of the population in Class I cities in West Bengal, 1951-2011

The population share of class I cities across districts

District-wise distribution of population is not only uneven in different size class towns but also in Class I cities of West Bengal. Three districts had (Kolkata, Haora, North 24 Parganas) population in class I cities in 1951 but in 2011 seventeen districts out of nineteen districts recorded class I cities population. Kolkata shows 100% of the class I population throughout the decades. The share of class I cities population is much higher than any other size class town over decennials. The population concentration of Haora has gradually decreased over the decades. It should be mentioned that the total class I cities population in Haora is improved (4.33 lakh in 1951, 7.38 lakh in 1971, 12.90 lakh in 1991, and 17.19 lakh in 2011) but the share of the population in class I cities decreased over the decades because other size class towns' numbers and population have grown more in proportionate to class I cities and also pull off economic activities or shifted of economic center to large and medium size class towns. On the other hand, the population share in class I cities in North Twenty-Four Parganas has uninterruptedly increased over the decades. In 1951, there was only one class I city with 1.35 lakh population in North 24 Parganas but it grew to 5 class I cities with 8.33 lakh population in 1971, 16 class I cities with 26 lakh population in 1991, and 22 class I cities with 46.84 lakh population in 2011. The reason for this increase in the number of Class I cities in North 24 Parganas is that many large towns have transformed into class I cities, and consequently the share of class I cities population has increased in proportion to other size class towns. It is noteworthy that North 24 Parganas is one of the top industrialized districts in the state. During the last century,

different industries such as leather tanning, brass manufacturing of cutlery, cotton handloom, bell-metal industries, pottery, etc had expanded in the district. Later, various large industries like engineering, manufacturing, paper, rubber, textile, chemical, etc were developed. Jute manufacturing and Cotton handloom industry play a great role in the district's economic development and many large-scale industries are established in several class I cities in this district like Kamargati, Naihati, Titaharh Barasat, Basirhat, and Kanchrapara, etc has attracted people to these industrial centers. This is also reflected in the increase in the working population in factories of North 24 Parganas. In 2008-2009, 112,264 workers were employed in 1,016 different categories of factories in North 24 Parganas. Moreover, both in North and South 24 Parganas, there are approximately 7,562 factories and around 469,984 average daily workers working in 2013 (District Statistical Handbook, 2013).

Although the share of the urban population is 100% in Kolkata the total urban population has decelerated over the decades due to out-migration from Kolkata to surrounding cities and towns because of high crowding and living cost in the core of the city. As the transportation system improved and the availability of low-cost land and housing in the peripheral districts, rapid growth is happening in these peripheral districts. It is worthy to mention that the dominance of Kolkata in population share in class I cities is due to the Hugli or Kolkata Industrial belt with 8,746 registered factories in 1989 and 33,749 small factories in 1990, part of which lies in Kolkata district, some part in North and south 24 Parganas, Nadia, Haora, and Hugli.

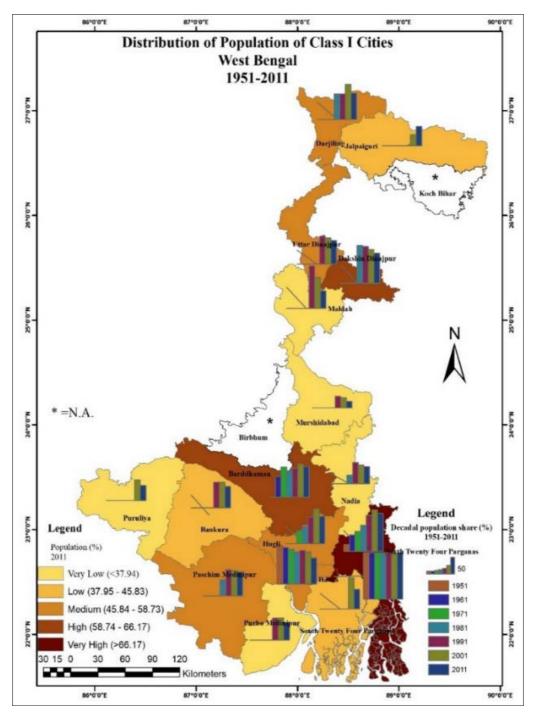


Fig 3: Spatial pattern of trend of class I cities in West Bengal, 1951-2011

Barddhaman district has a very large percentage of the urban population in class I cities throughout the decennial because the industrial zone of the district consists of areas under Durgapur Sub-Division and Asansol Sub-division. Different five-year plans engendered many new industrial hubs of Chittaranjan and Durgapur, adding to the urban centers of the regions like Kulti, Asansol, Burnpur, and Raniganj. Therefore, all industrial regions provide job opportunities to the people which leads to the growth of a high percentage share of the urban population in class I cities in the Barddhaman district. The share of the urban population in cities has grown because of the promotion of lower-class towns and UAs to higher-order size classes (Giri 1998) [16].

Four districts *viz*. Darjiling, Dakshin Dinajpur, Nadia, and Paschim Medinipur acquired their first-time urban population in class I cities in 1981 and showed minor ups

and downs in the share of population till 2011. Another group consisting of five districts of Maldah, Murshidabad, Uttar Dinajpur, Bankura, and Purba Medinipur got their class I city for the first time in 1991 because of the promotion of class II towns into class I cities. Maldah recorded the highest share of the urban population in class 1 cities in 1991 because there was only one city (English Bazar) and one small town (Old Maldah). Therefore, the people of Maldah district are preferring to live in class I city for the betterment of life, education, and job opportunities. districts including Uttar Dinajpur, Maldah, Murshidabad, and Bankura have recorded a consistent diminishing pattern of growth in the share of class I cities' population from 1991 to 2011. This is due to changes in boundaries of the cities (reclassification), congestion in the city, the shift of cities population to other size class towns because of high living costs in the core of the cities, and

finally, the emergence of different size class towns. In 2001 and 2011, class I cities were accompanied by a significant decrease in population share and a substantial increase in population share in small towns (Chakraborty *et al.* 2015) ^[13]. Koch Bihar and Birbhum, both districts do not have class I cities population because some way these districts are not so much developed (economically) pose any significant sign. There are some districts such as Murshidabad, Purulia, Jalpaiguri, Bankura, and Nadia which have a low percent urban population residing in class I cities because most of the population lives in large, medium, and small towns. Murshidabad registered a very low (<20%) share because only one class I city (Berhampore) was there with 1% of the total class I city population. In the low category (20%-40%);

Purulia, Purba Medinipur, Nadia, and Maldah which comprise seven class I cities (English Bazar in Maldah, Nabadwip, Krishnanagar Santipur, Kalyani in Nadia, Puruliya city in Puruliya, Haldia in Purba Medinipur) with 6% of total class I cities population. While Darjiling, Jalpaiguri, Uttar Dinajpur, Bankura, Haora, Hugli, South 24 Paraganas, and Paschim Medinipur recorded a medium share of the population (40%-60%) in class I cities with 24 cities which is 39% of the total cities (62) and holding 30% of the population of total class I cities. In the high to very high group (>60%), four districts (Barddhaman, Kolkata and North 24 Parganas and Dakshin Dinajpur) retain 32 class I cities which is 52% of all cities and embraces 63% population.

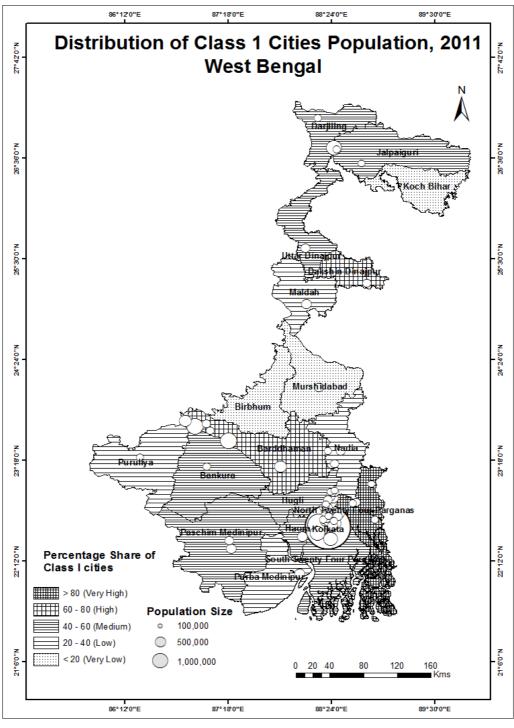


Fig 4: Share of class I cities population in West Bengal, 2011

The growth rate of population in class I cities across the districts

The most important components affecting population growth rate are birth rate, the death rate (natural increase), migration, and reclassification of towns/cities. It is also been seen that population growth is directly associated with the convenience of urban amenities, urban infrastructure, and finally, regarding policy perspectives which are in interrogations in urban areas. Variation in the rate of growth of urban population across the districts is also noteworthy suggesting a high degree of spatio-temporal diversity. In the developed world, cities and towns are growing speedily attributed to migration but in developing countries, cities/towns are growing because of migration and natural increase (Potter and Evans 1998) [18]. Few districts registered a high growth rate over decades (figure 5).

Kolkata is the only class I city where the growth rate is consistently decreasing from 1951 to 2011. Bhagat and Yaday (2014) [4] stated that the low decadal growth rate in Kolkata UA is due to deindustrialization since the 1960s. transit of major private companies to the exterior, and squished functional linkage to adjoining towns and cities, that operated as push factors. Population growth of Kolkata Urban Agglomeration declined from 19.60 percent in 1991percent in 2001-2011(Ajay 2001 to 6.87 Chandrashekhar, 2014) [22]. Das and Bhushan (2014) [19] acknowledged that between 2001 and 2011, core districts of Kolkata faced a negative growth rate whereas bordering districts acquired more than a million population which accounts for an overall positive growth rate in the Kolkata urban agglomeration.

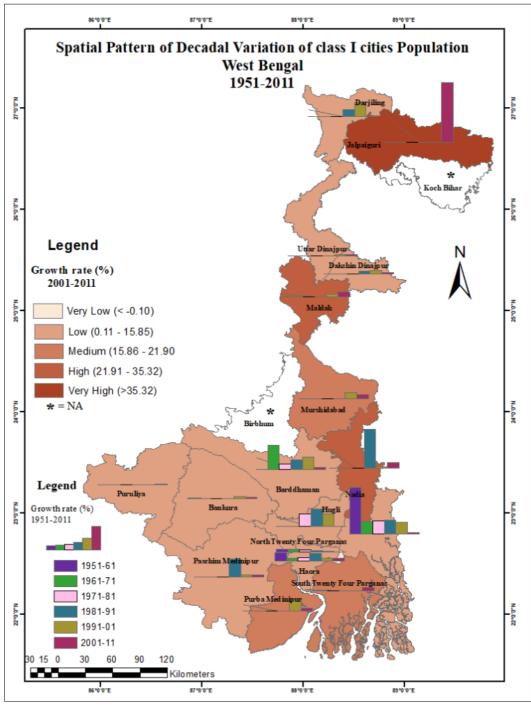


Fig 5: Spatial pattern of decadal variation of class I cities population in West Bengal, 1951-2011

North 24 Parganas recorded the highest rate of change in 1951-61 because three large towns (Kamarhati, Baranagar, and South Dum Dum) upgraded to class I city in 1961but after that it shows ups and downs. Barddhaman experienced a high growth rate in 1961-1971 because, in 1961, two cities (Asansol and Barddhaman) were there but in 1971, Durgapur added to class I cities from class III towns, and also a huge number of populations migrated from rural as well as other towns to these cities in search of jobs and for other activities. In 1981-91, the highest rate of change has found in Nadia, Hugli, North 24 Paraganas, and Paschim Medinipur. Jalpaiguri shows the highest rate of change whereas Kolkata shows negative change and negligible growth rate in other districts in 2001-11. In 2001, only Jalpaiguri city was there in Jalpaiguri district (with 1 lakh population) but in 2011 two more cities (Dabgram and part of Siliguri with 4.45 lakh population) have been added which resulting into high growth rate during 2001-11.

Growth of numbers of class I cities

Post-independence onward, plenty of class I cities have emerged around Kolkata (south-east) especially in North 24 Parganas and Haora, due to their sound economic profile and locational advantages (near Kolkata metropolitan). In 1951, there was only 3 class I cities in West Bengal,

including Bhatpara (North 24 Parganas), Haora Municipal Corporation (Haora), and Kolkata Municipal Corporation (Kolkata), and this number of class I cities consistently increased from 12 in 1971 to 42 in 1991 and 62 in 2011. The number of class I cities has increased as a result of the promotion of different size class towns into class I cities due to the growth of economic activities in different size classes that led to the high level of migration, natural increase, submerged of other size classes into class I cities, etc. The Upgradation of the number of urban centers from lower size class groups to class I cities which bring about the top-heavy structure of the urban population in West Bengal (Mandal and Ray, 2013).

1981 to 1991, nearly 21 cities emerged where North 24 Parganas registered the highest number (8) followed by Hugli and Nadia. And 16 new cities were added between 1991 to 2001, but only four cities were added in the decade 2001-2011 because very few class II towns were upgraded into class I cities due to many of these towns were being reclassified, with low natural growth rates, and people have migrated more to existing class I cities. It is worthy of mentioning that many class II town populations have reached near to the range of the population of class I cities like Dhulian (95,706), Chakdaha (95,203), Dankuni, Kontai, etc. but were unable to cross 100,000 population.

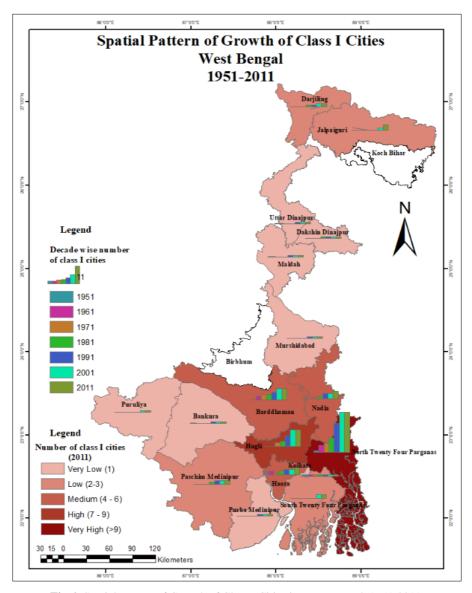


Fig 6: Spatial Pattern of Growth of Class I Cities in West Bengal, 1951-2011

It is found that no growth in the number of cities has been observed in the district of Uttar Dinajpur, Dakshin Dinajpur, Murshidabad, Maldah, Bankura, Puruliya, South 24 Parganas, Purba Medinipur and Kolkata. On the other hand, the number of class I cities is still static or increased throughout the decades in Barddhaman, Nadia, North 24 Parganas, Hugli, Darjiling, Jalpaiguri, and Paschim

Medinipur. This figure also expressed that Haora followed an increasing trend of growth of class I cities number over the decades except 1971 because, in this Census year, Bally (Municipal) was declassified. North 24 Parganas has retained an ample number of class I cities and grow consistently over the decades.

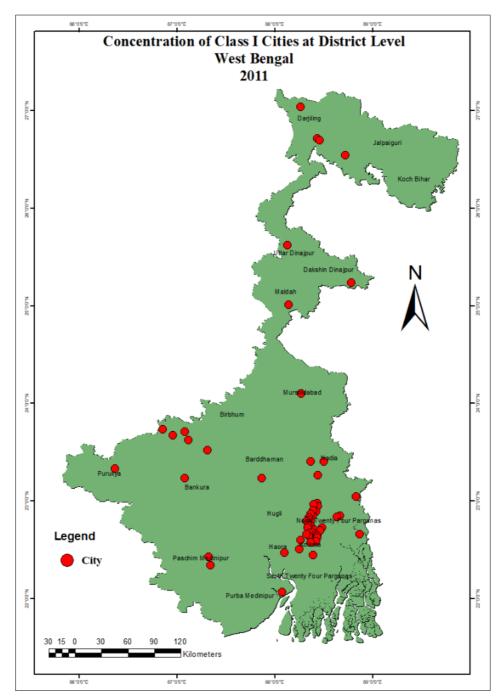


Fig 7: Spatial Pattern of Concentration of Class I Cities in West Bengal, 2011

3.5 Population concentration in class I cities

The concentration index (CI) comes from the Gini but varies, as the ranking variables and variables of interest (for which the variation is assessed) are different. Therefore, CI is a bivariate measure of inequality, measuring inequality in one variable related to the ranking of another. Figure 8 clearly shows the concentration of class I cities' population through the Lorenz curve and Gini Index where about 53% of districts retain 9% of the population, and 84% of districts hold 38% of the population in class I cities. But about 89%

of districts contain 49% of the population and 95% of the districts noted 74% of the population and the rest of the 5% districts experienced 26% of the population. Therefore, only 16% of districts registered 62% of the population whereas 11% of districts recorded 51% of the population in class I cities. On the other hand, Gini Coefficient is 0.65 (65%) which means unequal distribution of class I cities population over the districts. Hence, very few districts noted plenty number of population and ample of districts enumerated insignificant number of populations in class I cities.

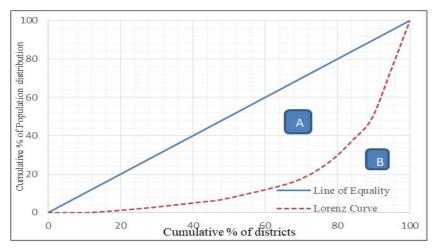


Fig 8: Concentration of class I cities in West Bengal, 2011.

On the other hand, figure 9 clearly indicates the district-level concentration of class I cities population by using the Location Quotient (L.Q) value. Central-north and south-eastern districts like Kolkata (1.61), North 24 Parganas (1.32), Barddhaman (1.07), and Dakshin Dinajpur (1.05) exhibited a higher value of L.Q (> 1) which means these districts are concentrated very high percent class I cities population in 2011. Only one district that is Murshidabad recorded low L.Q values (0.5). And rest of the thirteen districts except Koch Bihar and Birbhum shows medium L.Q values (0.5-1.0) that indicate a moderate concentration of class I cities population in the remaining districts.

Bhagat and Yadav (2014) [4] found a correlation between the growth rate of cities and towns with different measures such as population, area, and distance. Firstly, they observed that dense urban centers have grown at a sluggish pace, and

secondly, if the distance of the towns from core areas increases then the growth rate starts to decline. Das and Bhusan (2014) [19] ascertain that the negative growth rate of Kolkata city is the result of negative net migration, though a fleck of growth in Kolkata occurred due to natural increase. Gilbert (1993) [17] appropriately adverted that people out migrate from the core city to its peripheries subsequent to the akin dispersion of economic activities, as a result, the growth rate of cities decelerated. Singh (1989) [20] pointed out that about two-thirds of the urban population growth of large cities was due to natural growth. The rate at which cities grow can be determined by various factors such as topography and climate, geographical location, types of industry, accessibility of natural resources, and linkages with other cities in the region (Balk *et al.* 2009) [2].

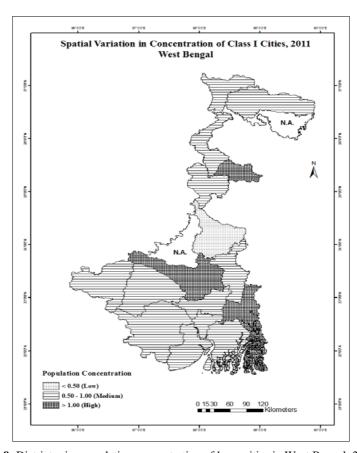


Fig 9: District-wise population concentration of large cities in West Bengal, 2011

It is remarkable that the population growth rate cannot be exclusively assigned to a decline in the fertility rate (Kundu, 2011) [9-10] rather than it is due to the higher cost of living and a reduction in job opportunities and consequently, these two factors can hamper migration into big cities (Ajay and Chandrashekhar, 2014) [22]. Numerous studies (Bhagat 2004; Kundu, 2013; Das and Bhusan, 2014) [6, 11, 19] pointed out that large cities have encountered a declining population growth in their core areas and a relatively higher growth rate registered in their peripheral areas as a result of considerable short-distance out-migration from core to the periphery.

3.6 Conclusion

The study has highlighted that urbanization in West Bengal is top-heavy oriented in larger cities. Before and just after independence, urbanization was Kolkata centric but in the last few decades center of urbanization shifted to the nonperipheral districts of Kolkata which signifies the possibility of a high level of urbanization in these districts in the upcoming days. In other words, the urbanization pattern in West Bengal is now independent of the metropolis and existing urban-industrial region. It has been noticed that the growth rate of Class I cities ups and downs over decades but continuously declining (14% in 1951-1961 to 7% in 1981-1991 and negative growth rate in 2001-11) in Kolkata over the decades. It is also been seen by calculating the concentration index (Gini index, Lorenz curve, and Location Quotient) that very few districts noted a large population and an ample of districts registered a small population in class I cities.

It is seen earlier in different five-year plans that the policy related to urban development mainly pertained to large and metropolitan cities. There was great apathy toward small and medium towns. However, a lot of policies and programs have been developed to enhance and maintenance of urban infrastructure, control migration from small and medium towns into class I cities, and minimize the burden on cities. Therefore, there is a need for balanced integrated development of the rural and urban areas on the one hand and cities and towns of various hierarchies on the other hand. Therefore, government programs like GEMs (Generator of Economic Momentum), Integrated Urban Development Program (IUDP), Integrated Development of Small and Medium Towns (IDSMT), Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Smart Cities Mission (SCM) along SEZs (Special Economic Zone) should be promoted to reduce the flow of outmigration from small and medium and large towns to class I cities. Though urbanization at the district level in West Bengal is characterized by the uneven distribution of population and high population concentration in class I cities due to unequal allocation of urban services, job opportunities, different kinds of economic activities, and poor profile of economy in medium and small towns. Therefore, proper planning, research, and action should be needed from the state as well as central government to enhance required infrastructure and services, and job opportunities for all towns and cities in an apposite manner. Thus, prejudice among towns and cities at the district level could be curtailed productively.

References

- 1. Bagchi E, Chatterjee K. Nature of the Process of Urbanisation in South 24 Parganas District of West Bengal, India: A Spatio-temporal Analysis. Archives of Applied Science Research. 2015;7(5):73-90.
- 2. Balk *et al.*, Mapping urban settlement and risks of climate change in Africa, Asia and South America, Population Dynamics and Climate Change; c2009. p. 80-103.
- 3. Banerjee S, De D. Level of urbanization: An empirical study of North 24 Parganas. International Research Journal of Social Science. 2014;3(10):12-20. ISSN 2319-3565.
- 4. Bhagat RB, Yadav V. Spatial dynamics of population in Kolkata urban agglomeration. Springer, Chapter 9; c2014. p. 157-173.
- 5. Bhagat RB. Emerging pattern of urbanization in India, Economic and Political Weekly. 2011;46(34):10-12.
- 6. Bhagat RB. Dynamics of urban growth population growth by size class of towns and cities in India, Demography India. 2004;33(1):47-60.
- 7. Chatterjee M. Urbanization in West Bengal: Present perspectives and future policy, Institute of Town Planners, Town Hall, Kolkata; c2010.
- 8. Chatterjee M. Urbanization trend and urban planning in West Bengal, India, Athens: ATINER'S Conference, Paper series No- PLA 20130632; c2013.
- 9. Kundu A. Method in Madness: Urban data from 2011 census, Economic and Political Weekly. 2011;17(40):13-16.
- Kundu A. Trend and process of urbanization in India, Human settlement group, IIED Population and Development Branch, UNPFA; c2011, 6. ISBN: 978-1-84369-820-
- 11. Kundu. Slowdown in Urban Growth". Urban India; c2013 Aug. Accessed 3 September 2014. http://infochangeindia.org/downloads/agenda_27.pdf
- 12. Sen A. Trend and pattern of urbanization in Kooch Behar district, West Bengal, Geo-Analyst, ISSN 2249-2909; c2015. p. 19-25.
- 13. Chakraborty SA, *et al.*, Changing Pattern of urbanization in West Bengal, An analysis of 2011 Census of India data, Asian Journal of Research in Social Science and Humanities. 2015;5(5):169-181. ISSN 2249-7315.
- 14. Konar DN. Nature of urbanization in West Bengal in the post-independence period. Economic Affairs. 2009;54(3 & 4):149-164.
- 15. District Statistical Handbook, Govt of W.B; c2013.
- Giri P. Urbanization in West Bengal, Economic and Political Weekly. 1998;33(47/48):3033-3035+3037-3038.
- 17. Gilbert A. Third World cities: The changing national system, Urban Study. 1993;30(4/5):721-740.
- Potter RB, Evans SL. The City in the developing world, Pearson Education Limited, Essex, United Kingdom: Addison Wesley Longman; c1998. ISBN 13:978-0-582-35741-9.
- 19. Das, Bhusan. Magnetism of India's Metros: A study of migrants' choice of destination, Social Change. 2014;44(4):519-540.
- 20. Singh A. Urbanization, poverty, and employment: The large metropolis in the third world, Population and

- labour policies programme, working paper no.165;
- 21. Office of the Registrar General and Census Commissioner, Census of India: c2011.
- 22. Ajay, Chandrashekhar. Urbanization and special patterns of internal migration in India. Indira Gandhi Institute of Development Research (IGIDR), JEL Code: R23, J61, O1; c2014.
- 23. Moskowitz CS, *et al.* Estimating the empirical Lorenz curve and Gini coefficient in the presence of error with nested data, Statistics in Medicine. 2008;27:3191-3208.
- 24. Dasgupta B. Urbanization and rural change in West Bengal. Economic and Political Weekly. 1987;22(8):337-344.
- 25. Karmakar J. Trend, Pattern and Key Challenges for Urban West Bengal, India. 2016;5(1):61-74.
- 26. Karmakar J. Emergence of Census Towns and its Socio-Economic Condition: Case of West Bengal. International Journal of Humanities & Social Science. 2015;3(4):22.
- 27. Ghosh B, Chakma N. Urbanisation in West Bengal: An analysis of recent processes. Space and Culture, India. 2014;2(2):28-41.
- 28. Ganguly S, Ghosh M. An Analysis of Trend and Pattern of Urbanization in Birbhum District of West Bengal. Asia Pacific Journal of Research. 2015;1(28):30-41.
- 29. Mandal S, Ray R. Measures of Urbanization in West Bengal: A Statistical Analysis. Asian J Res. Social Sci. Humanities. 2013;3(3):79-90.
- 30. The state of environment report, Environment Department, Govt of West Bengal;