

Full Length Research Paper

Concentrated or Dispersed Urbanization: A critical analysis of newly emerged Census Towns of West Bengal, India in 2011

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Received 12 May, 2015; Accepted 31 August, 2015

The emergence of 528 new Census Towns (CTs) in 2011 and their contribution to the growth of urban population brought significant changes in the nature of urbanization in West Bengal, a state in India. This present treatise made an effort to see the locational distribution of these new CTs with respect to Class I towns/cities in each district of West Bengal in quest of the contesting views of concentrated and dispersed urbanization using multiple ring buffers with varying radial distances and a robustness check. Number of new CTs and their population fall within and outside the buffers has counted to assess the intra-state nature of concentrated and dispersed urbanization. The study further examines Centrality Value, using eight nodal services to make a four-tier hierarchical order of new CTs so as to find out the places of eminence in terms of available institutional services. Results show that in highly urbanized districts, non-urban places close to Class I towns have transformed rapidly into urban and symbolized concentrated urbanization. Whereas in low urbanized districts, this kind of transformation can be observed for places located away from Class I towns which can be explained by their functional importance as rural service centres in general. This brought dispersed urbanization in the state, particularly in low urbanized districts. Although, higher order new CTs could be a viable option to develop subsidiary urban centres for the future, particularly in low urbanized districts of the state.

Key words: Census towns (CTs), Class I towns, concentrated and dispersed urbanization, Centrality Value, Hierarchical Order, Rural Service Centre.

INTRODUCTION

It is an unquestionable reality that at present, the world is urbanizing at a swift pace. The disheartening element of this incidence is that it does not evenly spread all over the world. Earlier than 1950, concentrated urbanization symbolize world urbanization picture as majority of urban

growth occurred in 'more economically developed countries' (MEDCs) and 'less economically developed countries' (LEDCs) marked with slow growth of urban population. Since 1950, rapid growth in urbanization has been witnessed primarily in LEDCs and slowed down in

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most MEDCs (<http://www.geography.learnontheinternet.co.uk/topics/urbanisation.html>). It is expected that most urban growth will occur in developing countries during the next decades (World Urbanization Prospects, The 2011 Revision Highlights). This shift of the course of urbanization is also marked with concentration as more and more population crowding in large cities of developing nations (Henderson, 2002). It illustrates distinctiveness (Bhattacharya, 2002) and rapid urbanization in many developing countries today (Henderson, 2002). For instance, urbanization scenario of India has always been featured with 'urban primacy' that is concentration of the urban population mainly in cities[†] with population 100,000 and above (Kundu, 2011), coupled with considerable fall of population share in small towns[‡] (Bhagat and Mohanty, 2008). This is instrumental to the growing trend of urbanization of India since 1901. Regional distribution of urban population of India is another expression of concentration as about half of the country's urban population resides in the six most urbanized states, namely, Maharashtra, Gujarat, Tamil Nadu, Karnataka, Punjab and West Bengal (Sivaramakrishnan et al., 2011). Premi (1991) had also possessed the idea of concentrated and dispersed form of urbanization. He stated that- if the new towns that appear as a part of urban agglomerations of metropolises and Class I towns and their population form the bulk of the new towns and their total population, there is concentrated urban growth. In contrast, if most of the towns are spread all over the country away from Class I towns, it implies dispersed urbanization (p. 49). In 1991, 866 new towns have been formed in India and 229 of these appeared as part of Urban Agglomerations (UAs). UAs of large towns having population of 50,000 to 1,00,000, witnessed an additional 4% population concentration of new towns that has brought concentrated urban growth around the Class I towns. Additionally, this facet of concentration was significant in many states including West Bengal (Premi, 1991). As West Bengal is among the six states where about half of the country's urban population resides, it will be interesting to see how the pattern and trend of urbanization evolved over the time in this state. The supremacy of cities could also be noticed here with a continuous increase of urban population concentration in highly urbanized districts[†] around the metropolitan city, Kolkata (Giri, 1998; Konar, 2009). Thus, the gap between India and West Bengal in terms of the degree of urbanization fall sharply since 1951 due to this concentrated type of urban development and subsequently

slowing down the pace of urbanization of West Bengal (Giri, 1998).

However, in 2011, degree of urbanization of India and West Bengal crossed the 30% mark and the gap between them started to wide-up again. This growing trend of urbanization in West Bengal is mostly attributable to the growth of urban population in low urbanized districts[†], located away from the metropolitan city, Kolkata, along with significant increase of population in small towns (Chakraborty et al., 2015). Historically, the population of small towns in West Bengal has experienced a declining trend since 1931 (Mandal and Ray, 2013). On the other end of the spectrum, many highly urbanized districts of West Bengal that is N.24 Parganas, Bardhaman, and Hugli are now witnessing a relatively slow growth of urban population. Interestingly, majority of these small towns surfaced in 2011 are 'census towns' (CTs), came into existence as they have just satisfied the census criteria to be declared so (Bhagat, 2011; Pradhan, 2013). These newly emerged small towns are greatly instrumental to reverse the trend of urban population growth especially in Kerala, Andhra Pradesh and West Bengal during 2001 – 2011 in comparison with preceding decade (Bhagat, 2011). In 2011, 2532 new CTs have surfaced in India (Census of India 2011, Provisional Population Totals Urban Agglomerations and Cities) and 528 among them are located only in West Bengal. A study has also shown that in India, while there are a large number of census towns situated in close proximity to Class I towns in 2011, many of them are not around the megacities and widely spread across the countryside, suggesting several urbanization process in operation (Pradhan, 2013). Evidently, in 2011 dispersion of urbanization could easily be observed in West Bengal both in size class distribution and spatial context (Chakraborty et al., 2015). But whether this decentralization tributes locational dispersion of these newly created towns away from existing cities in each district of West Bengal or not is yet to be examined.

Furthermore, rapid urbanization in developing countries is earnestly outmatching the ability of most cities to provide adequate services for their citizens (Cohen, 2006). Consequently, the urban and regional analysts have preferred the development of small and medium towns as an essential and substitute plan in alleviating the imbalance fashioned by large city development (Sharifinia, 2013; Mahdibeigi et al., 2010). Indeed, these small centres render services and facilities to their adjacent areas and could play a fundamental role in developing rural areas (Mahdibeigi et al., 2010). Studies have also shown that small and medium size towns could play an effective role in decreasing rural emigration to larger cities (Ebrahimzadeh et al., 2012) and turn into stopping-off points for migrants (Jamal and Ashraf, 2003). In such circumstances, less-developed countries have raised the issue that we should greet the development of small and medium towns through well-thought and

[†] According to Census of India, Class I towns are synonymous to Cities.

[‡] Urban places in India have been categorized into six classes according to population size ranging from less than 5000 to 100,000 and above. Among these, only places with 100,000 and above population are designated as 'City'. Apart from this, the Census of India does not offer any precise definition of small or medium sized towns. However, in many studies, a small town has been defined as place with below 20,000 population (Singh, 1999, p. 49-50).

purposeful policies rather than regarding it as a steady and automatic process of development (Sharifinia, 2013). In a country like India, where around 70% of population is still living in rural areas and intends of development is to develop non-urban regions (Rural areas), then assessment and appointment of small towns for rural and regional development have to be done with deliberation. Therefore, the study of these small towns, primarily their locational characteristics and functional bases is significant for rural development. Concerning the strategy of transforming non-urban places into urban areas (especially CTs), this present treatise made an effort to see the locational distribution of these newly emerged towns with respect to cities in each district of West Bengal in quest of the contesting views of concentrated and dispersed urbanization. Besides, this study also intends to find out the places of eminence in terms of available institutional services and their spatial locations.

Development of Census Towns in India

In 1961 Census year, a two-fold criteria had been adopted in order to bring a cross-sectional comparability in the data of urban centres. This subsequently leads to the identification of two types of urban centres- Statutory towns (based on administrative criteria) and Census towns (based on demographic criteria) (Sivaramakrishnan et al., 2011). In the following census years, the criteria of identifying census towns have gone through some adjustments, especially the functional criteria. The latest 2011 census has defined census towns based on- a minimum population of 5000, at least 75% of the male main working population engaged in non-agricultural occupations and a population density of at least 400 per square kilometre. Loss of any of these criteria could also lead to declassification; from urban to non-urban place.

In India, development of CTs may occur in many ways. Noteworthy among all is the up-gradation of villages and/or out growths into CTs, which reflects an 'in-situ' development (Pradhan, 2013), that is, non-urban places of 2001 acknowledged as urban in 2011 census year. It is also true that rural areas nearer to cities perhaps transform more quickly into 'Census town' and the only condition for this is that rural areas have to be located nearer to the cities. Apart from that, districts with large number of villages always have the probability of witnessing enormous transformation of large villages into CTs and this may not be attributed to nearness or proximity to Class I or million plus or metropolitan cities (Pradhan, 2013).

MATERIALS AND METHODS

This study is based on district wise secondary data collected from Primary Census Abstracts of West Bengal (2001 and 2011). 'Out growths' in each district have not been considered here. Two

different types of the distributions of new CTs, developed in 2011, can be observed. Firstly, Absolute distribution- simply means number of new CTs in each district. If the districts around the million or metropolitan cities have huge number of large villages then this would possibly signifies concentration as the transformation of large villages into Census towns is reasonably rapid nearer to metropolitan/million plus cities and the second is Relative distribution- ratio between number of new CTs to the number of large villages in 2001 (4000 and above population) of each districts (Pradhan, 2013). Imperative to mention that the values of ratio depend on variation in the size organization of settlements; districts with higher number of new CTs coupled with higher number of large villages (4000 and above population) would represent low ratio and vice versa (Pradhan, 2013). Therefore, both facets of distributions of new CTs could not enlighten the entire story and it will be interesting to scrutinize the location of those new CTs that might explain whether they are surfaced around the Class I towns or beyond them, indicating concentrated or dispersed urbanization respectively. In doing so, geographical locations of all new CTs have been acquired (latitude and longitude) from 'Google Maps'. As towns with larger population (primarily Class I towns) affect vast areas and places fall within this area may transform more rapidly, they are categorized into four groups based on their population size and multiple ring buffers have been assigned accordingly. In order to validate our observations, a robustness check has been used through 25% increase and reduction of the radiuses of the buffers (Pradhan, 2013). Number of new CTs fall under the buffers has been counted to see whether they are crowding around the Class I or not. If one new CT comes under the overlapping zone of two or more buffers, it will be counted under the city with the larger population (Pradhan, 2013). Along with location, concentrated and dispersed distribution could also be explained considering the population of these new CTs (Pradhan, 2013). It is mention worthy that the methodology of 'proximity analysis' adopted by K.C. Pradhan (2013) has been thoroughly applied in our analysis to examine district wise variation except one- here we mainly focus on the population of 2001 instead of 2011, depending on the fact of the 'in-situ' development (Pradhan, 2013) of census towns. This same logic has also been considered in selecting available services.

Calculation of Centrality Value

Additionally, Centrality Value has been calculated using eight available nodal services so as to find places of functional significance. In accumulating information related to available services of newly declared Census Towns, 2001 Census village directory of West Bengal has been used. To calculate Centrality Value, a service base of 2001 of new CTs has been converted into centrality scores. For every single service (irrespective of their number of occurrences) centrality scores have been calculated using 'Location Quotient method' of Davis (1967). This is based on a few assumptions like –

First, to obtain 'Centrality Value' we have chosen service indicators covering the category of education, medical/health and other basic amenities like communication, finance, transport and recreation (Mandal, 2000). Due to the non-availability of data of economic variables, different institutional services have been considered here (Rahman and Noor, 2005). Each of the categories is represented by one type of central service and two of them have been sub-divided according to the position in the functional hierarchy (Table 1). The choice of these 'Central functions' has been done in view of many of these services are hardly found in rural areas. These are available only in towns due to their cost of operation (Mandal, 2000). It will be more logical to generate sub-divisions in each nodal category but limitations of data restrict us to do so. Secondly, a score has been allotted to each of the nodal

Table 1. Classification and weighting of Central/Nodal services.

Nodal services	Class I, 15 points	Class II, 10 points	Class III, 5 points
Education	College		Industrial school
Medical		Hospital and Nursing home	
Communication		Telephone office	
Finance	Bank		
Transport		Railway	Bus
Recreation	Cinema		

Source: Based on Mandal, 2000.

services according to their hierarchical position irrespective of their frequency of occurrences (Mandal, 2000) and finally, only those CTs have been taken into consideration which has at least two nodal services regardless of their functional units.

Score of any single unit of service has been calculated using the following equation:

$$CS = \frac{t}{T} * 100$$

where CS = Centrality Score for any Central service 't',
 t = One unit of Central service 't' present at a new CT,
 T = Total number of functional units of 't' present in the block where the new CT is located.

It means, the greater the scarcity of a service in a block, the higher will be the Centrality score of that service and vice versa (Rahman and Noor, 2005). 'Centrality Score' of all available services are then summed up to get 'Centrality Value' of an urban place (Ubale and Lokhande, 2011). So, higher the 'Centrality Value' more will be the functional importance of a place in a block. In order to represent these Census towns involving their corresponding Centrality Values, we have produced a four-tier hierarchical order. We assume that non-urban places without having any of these Central services would rely on to those CTs which have adequate institutional services within their respective blocks and this possibly turn them out to be 'rural service centres'.

RESULTS AND DISCUSSIONS

Location and Distribution of New Census Towns and Their Spatial Relation to Class I Towns

As we already have pointed out that, places particularly rural areas nearer to cities perhaps transform more quickly to turn into 'census town', it is essential to see their locational distribution in order to observe whether there is concentrated or dispersed urban development (new CTs) is taking place around Class I towns in different districts of the state. Studies have found that one village may develop into an urban area owing to the growth and demand of its adjacent rural areas and this does not correspond to the nearness of existing large towns (Rondinelli, 1983; Gupta, 2010 in Pradhan, 2013).

The visual impression of Figure 1 substantiates that in 2011, a large number of new CTs have mainly developed in districts around the Metropolitan city, Kolkata (Figure 1.A). However, the picture of relative distribution (Figure

1.B) depicts relatively less concentration in the distribution of these new CTs in districts immediate to Kolkata and high level of concentration in some districts located far away from Kolkata. This is eventually resulted into more scatter distribution (Relative) of these new CTs away from Kolkata. We have mentioned it before that variation in the size organization of settlements by districts could be a possible explanation of this (Pradhan, 2013); districts with higher number of new CTs (30 and above) associated with higher number of large villages (an average of 272). On the other hand, districts with higher value of ratio have rather smaller number of large villages. These are Haora, Purulia and Darjeling (Figure 1.B). The average number of large villages in these three districts is 91. Hence, both figures demonstrate dissimilar stories on account of the variation in size class distribution of settlements in different districts of West Bengal. In order to address these contesting pictures, the number of new CTs and their corresponding population (2001) fall inside a definite "radial distance (not road distance)" to Class I towns (100,000 and above population) has been calculated for each district of West Bengal (Pradhan, 2013).

The results of this investigation are shown in Table 2 where the fourth to the sixth columns show the proportion of new CTs around large towns based on three combinations of distance and their corresponding 2001 population and the seventh column shows the number of CTs (2011) and their population (2001) considered for this analysis in absolute terms. On an average, 46.68% of new CTs of 2011 rest within the buffer of large towns and accounts for 46.45% of the total population (Case I, Base Radius). So, about 53% of new CTs and 54% population of 2001 are located outside the buffer of Class I towns. If the radius is increased by 25% (Case II), these figures leap to 55.81% and 54.82% for number of new CTs and population, respectively. Similarly, if the radius reduced up to 25% (Case III), these figures are brought down to 36.51% and 37.46% for numbers and population respectively and that suggests about two-thirds of these new CTs are placed outside the buffer of Class I towns.

However, a wide inter-district variation could easily be observed (see Table 2). To facilitate our understanding, we have categorized all the districts into two broad

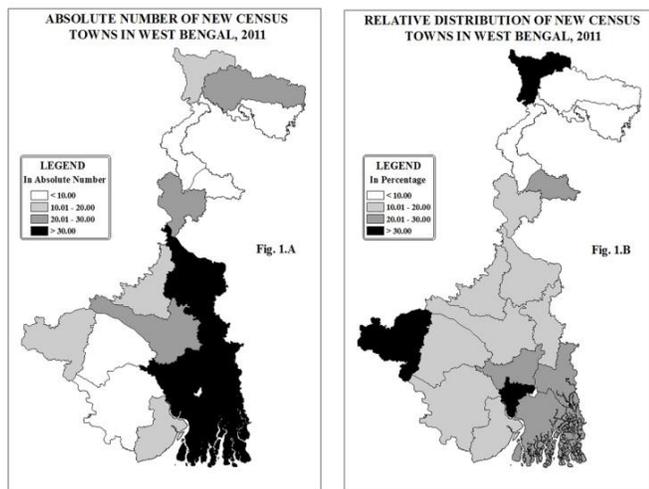


Figure 1. Distribution of New CTs of West Bengal, 2011.

classes i.e. highly urbanized districts and low urbanized districts. Each of the categories is further divided into two subcategories based on their position with respect to Kolkata i.e. nearer and distant to Kolkata. The result shows all the highly urbanized districts resemble significant concentration of number of new CTs and population regardless of their location with respect to Kolkata. In all these districts, location of more than 60% of new CTs point towards concentration around Class I towns. The value of population concentration is even higher, greater than 65%. An opposite picture could be noticeable in the case of low urbanized districts. All districts placed distant to Kolkata marked with low concentration in terms of both number of new CTs and population except Nadia where the concentration figures are slightly higher. S. 24 Parganas, the only low urbanized district nearer to Kolkata, is also displaying a low degree of concentration (see Table 2).

Table 3 exhibits the overall picture of West Bengal in accordance with the size of Class I towns. It shows that about 47% and 44% of new CTs and their population are in the vicinity of the town with more than 4 million population (Kolkata), respectively. Similarly, about 40% of new CTs and 38% of their population are in the proximity to towns with 100,000 to 500,000 population. In case of 500,000 to 1 million population towns, these figures are 9% and 13% respectively. The only insignificant large town group characterizes lowest concentration is towns with 1 to 4 million population (Table 3). That means 230 new CTs (in absolute number) were located nearer to Class I towns and 51.11% of them are in the proximity to million plus cities. It departs from the observation symbolizing a dispersed distribution (relative) of new CTs in West Bengal (see Figure 1.B) and confirms that majority of these new CTs are in the vicinity of million plus cities of West Bengal, featuring concentrated

urbanization. The observation of population (49.5%) also validates concentration around million plus cities. Interestingly, it is an opposite scenario in comparison with India where locational dispersion of new CTs away from million plus cities is the salient feature of urbanization in 2011 census year (Pradhan, 2013). Apart from all these, bulk of these new CTs and their population (53% and 54% respectively) of West Bengal are laid outside the buffers of Class I towns and they are widely dispersed over rural belts of the state. This particular situation is true for low urbanized districts located away from Kolkata in general. That means in highly urbanized districts, non-urban places close to metropolitan/million plus cities (Kolkata and Haora) are transforming more rapidly into urban places (Census towns). Conversely in low urbanized districts, non-urban places located away from Class I towns are transforming rather rapidly to turn into urban centres.

This obvious concentration of new CTs around million plus cities (Figure 2) may perhaps explain the low growth rate of urban population in the highly urbanized districts of the state in 2011. During 2001 – 2011, the annual growth rate of urban population of new CTs in highly urbanized districts (N. 24 Parganas, Hugli and Haora) fall inside the buffers of million plus cities was 2.00%, lower than the average growth rate of the state (2.97%). Even though high number of new CTs surfaced in these highly urbanized districts of West Bengal during 2001-2011, their proximal location to million plus cities (Kolkata and Haora) slow down the growth of population. Here, the Haora and S. 24 Parganas district draws particular interest. Haora is the most highly urbanized district of West Bengal in 2011 and contains about 34% of its urban population in small towns' group. This figure of concentration of urban population in small towns is larger than all other highly urbanized districts of the state. Surprisingly, annual growth rate of the urban population of new CTs of Haora that falls inside the buffers of million plus cities is 1.96%, lower than the district average figure of 4.29%. Similarly, annual growth rate of population of new CTs of S. 24 Parganas, the only low urbanized district around Kolkata, which falls inside the buffers is 2.68%. This is very low in comparison with the district annual growth rate of 9.22%. So, the new CTs within the vicinity of the million plus cities experienced relatively slow growth of population. Built up saturation (Bhatta, 2009) could be a possible explanation for this slow growth of the urban population of towns immediately adjacent to million plus cities of West Bengal.

Hierarchy and Spatial Distribution of New Census Towns

In general terms, hierarchy is a system with grades of status ranked one above another in a series, with the ranking usually reflecting some relationship of

Table 2. Proximity of New Census Towns to Class I Towns, 2011.

Category	Location	Districts	Case-I [*] (Base)	Case-II ^{**} (+ 25%)	Case-III ^{***} (- 25%)	CTs under Analysis (Population)
Highly urbanized District	Nearer to Kolkata	N. Parganas	24 74.07(71.36)	77.78(74.88)	59.26(58.31)	53(360665)
		Hugli	69.44(72.13)	77.78(75.92)	50.00(51.78)	36(258018)
		Haora	66.67(70.31)	73.1(76.94)	53.85(58.16)	79(532713)
		Bardhaman	62.01(65.38)	79.31(80.66)	48.28(50.20)	33(190612)
	Distant to Kolkata	Darjeling	66.67(66.61)	66.67(66.61)	57.14(62.67)	21(128874)
		Maldah	30.43(22.68)	52.17(41.96)	21.74(22.00)	23(183439)
		Murshidabad	11.63(13.31)	11.63(13.31)	11.63(13.31)	42(390204)
		Nadia	48.65(42.99)	64.86(59.73)	37.84(33.69)	38(306731)
		Birbhum	-	-	-	-
		South Dinajpur	25.00(33.61)	50.00(62.98)	25.00(33.61)	4(14272)
Low Urbanized Districts	Bankura	16.67(11.54)	16.67(11.54)	-	7(39126)	
		Purulia	-	13.33(10.24)	-	14(88647)
	Distant to Kolkata	Paschim Medinipur	-	13.33(24.99)	-	7(34631)
		Purba Medinipur	6.25(4.96)	6.25(4.96)	-	16(90366)
		Jalpaiguri	14.29(44.66)	19.05(46.82)	9.52(43.12)	22(288028)
		North Dinajpur	-	-	-	3(9674)
		Kochbihar	-	-	-	-
		Nearer to Kolkata	S. Parganas	24 42.55(39.76)	56.38(54.11)	30.85(27.81)
	West Bengal	46.68(46.45)	55.81(54.82)	36.51(37.46)	492(3592776)	

Source: Computed by Authors. Note: ^{*} Case I (Base): Towns with 100,000 to 500,000 population - 10 km radius, Towns with 500,000 to 1 million population - 15 km radius, Towns with 1 million to 4 million population - 20 km radius, Towns with more than 4 million population - 25 km radius. ^{**} Case II (+ 25%): Towns with 100,000 to 500,000 population - 12.5 km radius, Towns with 500,000 to 1 million population - 18.75 km radius, Towns with 1 million to 4 million population - 25 km radius, Towns with more than 4 million population - 31.25 km radius. ^{***} Case III (- 25%): Towns with 100,000 to 500,000 population - 7.5 km radius, Towns with 500,000 to 1 million population - 11.25 km radius, Towns with 1 million to 4 million population - 15 km radius, Towns with more than 4 million population - 18.75 km radius", (Pradhan, 2013). Note: The first number in a cell shows the total number (or share) of new CTs and figure in parentheses shows the total (or share) of 2001 population. This analysis is based on 492 new CTs out of 528 new CTs of West Bengal formed in 2011 census year; 36 new CTs are not falling in this analysis. Out of these 36 new CTs, 13 and 8 new CTs located in Birbhum and Kochbihar districts respectively, where no Class I towns are present. So, these 21 CTs are excluded from this analysis. Location of other 15 new CTs is not available in open source.

Table 3. Proximity of new Census Towns to large towns of different sizes, 2011.

Size Class of Towns (2011); As proposed by Pradhan, 2013	Case-I, Base number, (Population) in %	Case-II, (+25%) number, (Population) in %	Case-III, (-25%) number, (Population) in %
100,000 to 500,000	39.56(38.0)	35.32(34.95)	50.67(48.74)
500,000 to 1 million	9.33(12.54)	10.41(12.11)	8.71(13.50)
1 million to 4 million	4.0(4.97)	1.49(1.55)	10.33(11.00)
More than 4 million	47.11(44.53)	52.79(51.40)	30.29(26.76)
Total in The Proximity of Class I Towns	230(1668901)	275(1969594)	180(1345708)
Not in The Proximity of Class I Towns	262(1923825)	217(1623182)	312(2247068)

Source: Computed by authors.

dependence of those in each rank to those in the rank above (Siddhartha and Mukherjee, 1997). For an

effective planning at regional level and making wise choice of centres for development, measurement of

Table 4. Hierarchical order based on Centrality Value.

Hierarchical order	Category	Centrality range	Number of new census towns	Percentage of numbers
I	1 st order towns	Above 200	12	5.83
II	2 nd order towns	125 - 200	30	14.56
III	3 rd order towns	50 - 125	60	29.13
IV	4 th order towns	Less Than 50	104	50.48

Source: Chakraborty, 2014 (unpublished M.Phil Dissertation, pp. 108).

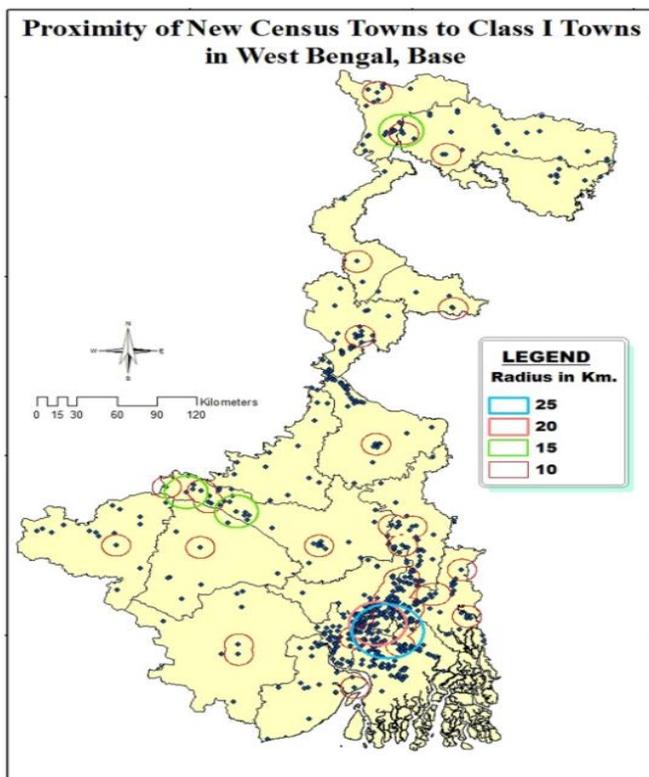


Figure 2. Proximity of New Census Towns to Class I Towns, Base radius.

centrality of centres and gradation is indispensable (O'Farrell, 1968). In this study, a four-tier hierarchical order system of the new CTs based on available services using 'Centrality Value' has been employed. These are – First order towns, Second order towns, Third order towns and Fourth order towns. Essential to point out here that the ranges used to order these new CTs are arbitrary. Table 4 containing the hierarchy of new CTs based of 'Centrality Value' shows that about 80% of new CTs under analysis are at the lower order (third and fourth) and only 20% of them belongs to higher order (first and second) in West Bengal. It signifies that very few of new CTs have functional importance at their block level. In several blocks of West Bengal, not just many new CTs but non-urban places (mainly Rural areas) also have

these institutional services. It makes these new CTs of West Bengal less attractive at their blocks as far as availability of institutional functions/services is concerned (Table 4).

Remarkably, the spatial distribution of these new CTs with respect to Class I towns involving their corresponding hierarchic positions have more appealing story to tell. Table 5 shows this distribution. The districts are similarly categorized as it has been done to represent the concentrated and dispersed form of urbanization. The location of these hierarchic new CTs have been represented in two definite forms – hierarchic new CTs within and outside the vicinity of Class I towns. The results show that about 38% of new CTs of different functional orders are located within the proximity to Class I towns and majority of them (about 62%) are outside the proximity to Class I towns in different districts of West Bengal. In West Bengal, there are 13 functionally important Census towns located within the proximity to Class I towns and nine among these are in highly urbanized districts. This concentration can also be observed for lower order (third and fourth) new CTs. There are no functionally important CTs within the proximity to Class I towns in almost every low urbanized districts of the state except two; Nadia and S. 24 Parganas. In highly urbanized districts of West Bengal, 45 new CTs of different hierarchical orders are within the vicinity of Class I towns and only 28 new CTs of different hierarchical orders are located outside the vicinity of Class I towns. This clearly confirms that in 2011, highly urbanized districts of West Bengal are not just experiencing locational concentration of new CTs around Class I towns but new CTs having functional importance are also situated close to Class I towns and that resulted into both geographical concentration of new CTs (in general) and functionally important new CTs (in particular) in these highly urbanized districts of the state by and large. However in highly urbanized districts, there are six functionally important Census towns located away from Class I towns. Contrary to this, there are 19 higher order CTs which are not just located in low urbanized districts but they are also situated outside the vicinity of Class I towns. This corroborates that in low urbanized districts, geographical location of bulk of new CTs and also functionally important CTs are away from Class I towns. It is also true that in low urbanized districts,

Table 5. Spatial distribution of new census towns in accordance to their hierarchical orders based on Centrality Value.

Category	Location	Districts	Census Towns within the Proximity to Class I Towns (Base Radius)				Census Towns outside the Proximity to Class I Towns (Base Radius)			
			1 st order	2 nd order	3 rd order	4 th order	1 st order	2 nd order	3 rd order	4 th order
Highly urbanized District	Nearer to Kolkata	N. 24 Parganas	-	1	4	4	-	-	2	3
		Hugly	-	1	5	7	-	-	3	4
		Haora	1	2	7	4	1	1	1	4
		Bardhaman	-	1	3	2	2	1	1	3
	Distant to Kolkata	Darjeling	2	1	-	-	-	1	1	-
		Maldah	-	-	1	4	-	-	2	5
		Murshidabad	-	-	2	-	-	2	3	5
		Nadia	1	2	1	3	-	1	2	6
		Birbhum	-	-	-	-	1	1	2	6
		South Dinajpur	-	-	-	-	-	1	-	-
Low Urbanized Districts	Distant to Kolkata	Bankura	-	-	-	1	-	1	3	1
		Purulia	-	-	-	-	-	2	4	3
		Paschim Medinipur	-	-	-	-	-	1	1	1
		Purba Medinipur	-	-	-	-	1	-	2	1
		Jalpaiguri	-	-	1	-	1	1	2	3
		North Dinajpur	-	-	-	-	-	-	-	2
		Kochbihar	-	-	-	-	-	1	2	-
		Nearer to Kolkata	S. 24 Parganas	-	1	1	9	1	4	3
	West Bengal	4	9	25	34	7	18	34	60	

Source: Computed by authors. Note: Due to the non-availability of location of 15 places, here we have represented 191 Census Towns in total. As there is no Class I towns in Birbhum and Kochbihar district, we have kept all Census Towns of these two districts in the category of outside the proximity to Class I towns.

majority of these CTs belongs to third and fourth order categories and this would eventually make these census towns less important/attractive places at their concerned blocks.

So, there is a limited number of functionally important new CTs in West Bengal and their location is also outside the proximity to Class I towns, primarily in low urbanized districts. Significantly, the mean population (in 2001) of these higher order CTs located within (largely in highly urbanized districts) and outside of the proximity to Class I towns of the state is 11,200 and 9150, respectively. In contrast, the figure of mean population of higher order new CTs located in low urbanized districts is 8700, lower than the previous two values of mean population. This clearly gives us an indication that in low urbanized districts, settlements ranked higher on the basis of 'Centrality Value' were not necessarily large in size in comparison with more populated settlements of higher order of the state in general and highly urbanized districts in particular. A study had also found that if a place with more population resembling low value of Centrality' then

the "provision of rural services is not its primary function" (Bracey, 1953). An opposite to this, small sized settlements resembling high 'Centrality Values' could possibly perform as 'rural service centres'. From all these, we may say that not just the scarcity of institutional services but the mean population figure of these higher order CTs in low urbanized districts of the state also validate their functional role as 'rural service centres' at their respective blocks. All of these simply give an indication that in low urbanized districts of West Bengal, rapid transformation of non-urban places, located away from Class I towns, into urban is generally due to the demands of basic utility-services (health, bank, education, recreation, transport and communication etc) by their surrounding villages.

CONCLUSION

After a long time, the course of urbanization in West Bengal begins to reallocate in 2011 and the results are

simply encouraging for low urbanized districts. But still there are some subjects which need proper attentions. For instance, 528 CTs were developed in West Bengal during 2001 – 2011 and information of 2001 has portrayed that 322 places among these did not even have at least two nodal functions and consequently they are counted out from this analysis. Out of these 322 CTs, 152 are located around the million plus cities of highly urbanized districts. This could possibly increase the pressure on the large towns of these districts which are already suffering from many issues including insufficient infrastructures and very poor provision of basic services. This situation would be even worse over time due the massive transformation of non-urban places into urban close to these large towns. Besides, there are limited numbers of functionally important service centres in West Bengal and they are geographically located close to big cities, particularly in highly urbanized districts. Another concern is during 2001-2011 only four municipalities have been formed in West Bengal. This clearly shows the slowness of the process of 'Municipalisation' in the state. Of course state government cannot grant municipal status for all urban places due to the West Bengal Municipal Act (Section- 3) [Samanta, 2012]. A study has found that census counting always targets each and every individual settlement unit without considering settlement agglomeration of CTs and subsequently underreporting of the actual urban population (Samanta, 2012). This eventually holding up the process of Municipalisation in the state as desired places would not get desired status. There are evidences also confirming how Gram Panchayets, the administrative body of CTs, are casual in order to provide and maintain services (Shaw, 2005) in these 'unappreciated' and burdened urban places. It is imperative to point out that majority of the functionally important CTs are in low urbanized districts away from Class I towns. In order to fulfil the broader perspective of regional development, effective planning policies by governments may perhaps promote these higher order CTs as subsidiary/alternative centres of development in the low urbanized districts of the state in future where the process of Class I town development has not accelerated yet². But whether these census towns would be economically effective or not needs an additional enquiry. In these circumstances, the first step should be a provision of distinct administrative status to these census towns so that these towns can take their own decisions.

The notion of 'Nagar Panchayets'³ could be a viable choice which is not so much popular in this part of the country. We hope that the data of 2011 regarding these available institutional services of these places may possibly bring an encouraging sign together with a positive approach by government to consider these places with the most concern. Otherwise, whether these census towns are concentrating around Class I/million plus cities or widely dispersing over the rural belts of the state away from

these apex towns will mean nothing. Indeed, this would ultimately bring additional burden to the existing big cities of the state.

NOTES

¹ Highly and Low urbanized districts with respect to state's average value of degree of urbanization. In 2011, there are five highly urbanized districts in West Bengal except Kolkata and 13 low urbanized districts.

² During 1991-2011, number of Class I towns in low urbanized districts of West Bengal has increased just four. For highly urbanized districts, this figure is 12.

³ According to the 74th Indian Constitution Amendment Act of 1992, a "Nagar Panchayet is a local administrative body for a transitional area, that is to say, an area in transition from a rural area to an urban area", (Available at <http://indiacode.nic.in/coiweb/amend/amend74.htm>). URL:

Conflict of Interests

The author(s) have not declared any conflicts of interest.

ACKNOWLEDGEMENT

We are sincerely thankful to the reviewers for their valuable comments, suggestions and guidelines.

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