

CENSUS TOWNS IN INDIA

Current Patterns and Future Discourses

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1. INTRODUCTION

The urbanization figures from Census 2011, which denoted a surge of Census Towns (CTs), was followed by initiation of a completely new range of studies, focused on *in-situ* pattern of urban development across the country (Pradhan, 2013, 2017; Samanta, 2014; Guin et al, 2015; Mukhopadhyay et al, 2016). These studies, some at macro while others at very specific levels, tried to capture the trend, patterns and underlying mechanisms of this new form of urbanization, and the associated issues like politics of urban classification. At an aggregate level, all these studies attempt to raise one critical question -- how the urban definition in India, which remains unchanged since the 1961 census, is extensive enough to capture the continuously dynamic and varied nature of socio-economic transformation happening across settlements in the country.

The 2011 census highlighted the enormous growth of CTs from 1362 in 2001 to 3894, along with a neck to neck growth of urban population than rural population in the country¹. The share of new CTs in the absolute growth of urban population within 2001-2011 was about 35 percent, which is the second highest component of urban growth after the natural increase in population². This refers to the fact that the process of urban transformation in India is not much attributed to movement of people from rural to urban areas, but more due to 'morphing of places' from rural to urban (Mukhopadhyay, 2017). However, the major part of such morphing of places are subjected to functionally defined urban areas (CTs) than those are administratively declared as urban (or statutory towns)³. Using the village level database of census 2011 and the previous censuses, the present study attempts to answer whether the growth of such functional urban areas or CTs is specific to the last decade or is going to be a part of India's future urbanization process as well. Since such prognosis requires a detailed review of the census methodology of determining CTs, the present study attempted to highlight some differentiations and shortcomings that arise as a result of the way the 'urban' is defined in India.

This paper is divided into three sections. In the first section, the census methodology to determine CTs in detail have been discussed and identification of the villages that can be defined as CTs in census 2011 have been attempted⁴. In this section, we also try to explain the differentiations that arise in the rural-urban classification in due course of the census methodology of the identification of CTs. We have also analysed the regional concentration of CTs and change in their distributions over time. The second section explores the spatial characteristics of CTs, mainly in relation to the existing urban areas and to their neighbourhoods. In the third section, we attempt to comment on the economic nature of upcoming CTs, in order to find whether they are actually showing some trace of relative affluence as a result to their stride towards urban, in comparison to the other rural neighbourhoods.

¹ The absolute growth of rural population within 2001-11 was 91.3 million, while the same for urban was 90.9 million.

² Within 2001-11, out of 90.9 million urban growth, 31.8 million was attributed to reclassification of settlements, 20.6 million was due to net rural-urban migration, and 38.5 million was due to the combined effect of natural increase of the population and change in the administrative jurisdiction of settlements.

³ In India, urban areas are of three kinds: Census Towns (CTs), Statutory Towns (STs), and Outgrowths (OGs). All rural areas with a population of more than 5,000, population density of at least 400 people per square kilometer and non-farm workforce (male main) of 75 percent and more classified as CTs. On the other hand, STs are defined by statute as urban like Municipal Corporation, Municipality, Cantonment Board, Notified Town Area Committee, Town Panchayat, Nagar Palika etc. ('Census of India 2011: Meta data', Office of Registrar General of India, Government of India). OGs are spaces which are often considered contiguous part of a ST or CT and bears some physical urban characteristics like urban-like amenities. Census towns, therefore are only functionally urban but governed by Gram Panchayats. There were 2532 new CTs came up within 2001-11, while the number of new STs were only 242.

⁴ In this paper, a batch of terms been used to denote CTs that came up and will appear at different periods of time. While all the existing CTs of 2001 and CTs those came up within 2001-11 been termed as 'existing CTs', all villages that are identified to be CTs in the upcoming census (2021) are noted as 'upcoming CTs.' The existing CTs of 2001 alone were termed as 'CTs of 2001' while the new CTs that came up within 2001-11 alone are noted as 'new CTs of 2011.'

2. IDENTIFICATION OF CTs: EXISTING METHODOLOGY AND IT'S CHALLENGES

The rural-urban identification process in India is *ex-ante* to the population census and hence classification of an area is finalized before the census process. As a result, the identification process uses information from the previous census. As noted before, out of the two types of urban areas in India (i.e. census towns and statutory towns), CTs are defined on the basis of three parameters of population, density, and workforce. The identification process uses a reduced population cut-off of 4,000 instead of 5,000 with the assumption that population of a village would reach the prescribed level in ten years. However, no adjustment is being made to population density and non-farm workforce.⁵

Admittedly, this methodology may under-estimate (ignore) or erroneously over-estimate (include) some portion of CTs during the projection process. Both of these errors are due to the differences in the growth rate of expected and actual population and non-farm workforce. 'Ignored CTs' refers to under-classification of villages which were not considered as CTs, i.e. they could not clear the threshold ten years ago, but actually manages to attain so in the current census. Since the area of villages is relatively constant over time, this usually happens due to the growth of population or non-farm workforce at a rate more than expected during the intercensal period. On the other hand, inclusion error may happen due to negative or less than expected change in one or both criteria; among the already identified settlements as CTs in the previous census.

As the detailed settlement level data on population, area, and workforce is available for both 2001 and 2011 censuses, it is possible to estimate the number of villages and new CTs those fall in this 'ignored' and 'included' criteria over last two decades. However, there is two challenges: i). the census manual indicates that the workers in the "Plantation, Livestock, Forestry, Fisheries, Hunting and allied activities" (PLFFH) sector must be treated as farm employment in the identification process. But it was the census of 1991, which was the last census to provide village level data at such disaggregated level. Since 2001, village level workforce data are available by four broad groups and PLFFH workers are clubbed in 'Other' category which is primarily a non-farm sector.⁶ Adjustment in this regard requires data from multiple censuses, as the most recent estimates of PLFFH workers are found only at the district level.

Using the same methodology as the Census, it is possible to identify all rural areas in 2011 which would be eligible to be classified as a CT in the forthcoming census (2021). However, there are three challenges which affect the accuracy of such estimation. The first one, as already pointed out is related to absence of village level PLFFH workers data. The second problem is related to assimilation of villages with the existing or new urban areas in the meantime, which may result in overestimation of the actual number of CTs. This is specially be the case for the villages that are close to statutory towns. However, it is difficult to identify such villages *ex-ante* as creation or expansion of the STs is primarily a state subject⁷. The third issue which could affect the numbers of upcoming CTs if some of the existing STs would get de-notified and re-classified as CTs. Similarly, some of the outgrowths (OGs) can be identified as standalone CTs if they satisfy the threshold criteria. Since such incidence is not very common⁸, it is unlikely that it is going to affect the aggregate numbers substantially.

⁵ "Rural-Urban Classification for the 2011 Census", Office of Registrar General of India, Government of India, Circular No. 2, 23rd August 2008.

⁶ The nine fold workforce data at village level has been discontinued since 2001 and replaced with the four-fold groups (cultivators, agricultural labourers, household industry workers and other workers).

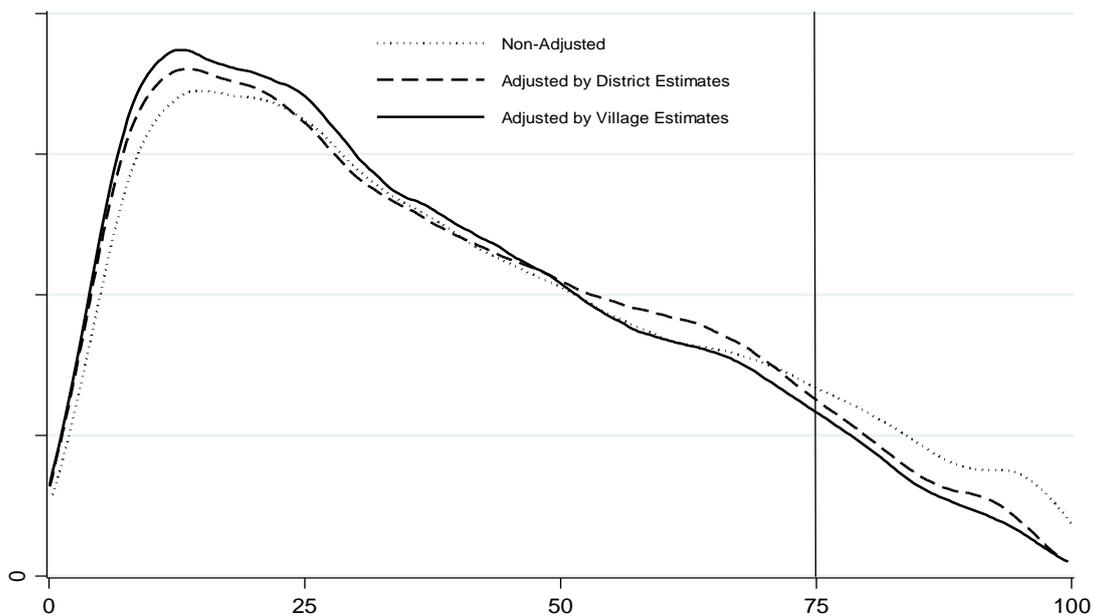
⁷ Out of the different kinds of STs, other than the Cantonment Boards, which are governed by the Union ministry of Defence, all other types are defined and administered by the respective state Governments.

⁸ There were only 141 CTs that came up between 2001 and 2011 as a result of reclassification of STs and OGs to CTs (Pradhan, 2013).

2.1. Adjustment for Plantation, Livestock, Forestry and Fisheries (PLFFH) Workforce in 2011 Census

In the absence of village level disaggregated workforce data for 2011 census, we have used information from both census 2011 and census 1991 to estimate the village level PLFFH share. We have used the readily available district level PLFFH share of census 2011 (i.e. Table B-4) to take into account the inter-district variation in the PLFFH share.

Figure 1: Distribution of Rural Male Main Non-Farm Workforce for Large Villages* (2011)



*Large Villages refer to villages with a population of more than 4000 & density of more than 400 persons/sq.km.

Source: Census of India, 1991, 2001 & 2011

There are large inter-district variations in the PLFFH workers which range from zero to 71 percent of the total main male workforce in 2011⁹. Similarly, there is a large variation within districts in terms of PLFFH share. For villages with at least 3500 population in 1991, the difference between village and district share of PLFFH workers (rural) can be as high as 75 percentage points in some cases¹⁰. Therefore, it was essential to correct the variation of PLFFH workforce not only across districts but also within districts. Since the 2011 census does not provide PLFFH workforce estimates at the village level, we used the 1991 PCA data to account for inter-village variation in PLFFH share. We grouped all villages in each district into quintiles¹¹ based on the share of PLFFH workers and calculated the mean share for each of the cohorts. We calculated the ratio of mean share of each village cohort to district share and multiplied it to 2011 district share to obtain PLFFH share for each village in 2011.

$$A_{ijk}^{2011} = A_k^{2011} * \left(\frac{A_{jk}^{1991}}{A_k^{1991}} \right)$$

Where i is a village in a cohort j of district k and the j is based on the actual PLFFH share in 1991; superscripts refers to respective census

⁹ The share of forestry and logging, and fishing was 2.1 percent in 2010-11 as against 3.5 percent in 2000-01 (NAS, CSO). For Census 2001, the share of male main PLFFH workforce is 2.8%; nationally.

¹⁰ Districts like Udalguri in Assam or Jalpaiguri in West Bengal have variation of PLFFH workers from none to 100% at village level, while the shares at district levels are 11% and 19% respectively (as per 1991 census data).

¹¹ Villages which have no PLFFH workers have been dropped. Also, only those districts which has at least 10 or more villages with PLFFH workers have been considered for adjustment.

A= Share of male main PLFFH to total male main worker

This village share of 2011 have been deducted from the village level male non-farm workforce from census 2011 to get the final estimates for the rural male main non-farm workers in 2011. Adjusting at this line significantly calibrates the distribution of non-farm workforce at the village level, in comparison to the non-adjusted estimates or estimates adjusted simply using the district shares, as evident from Figure 1. However, it is assumed that the village share of PLFFH workers remain constant from 1991 to 2011 and the multiplier derived as a ratio of the village PLFFH cohort vis-à-vis district PLFFH share remains constant from 1991-2011. These approximations can be regarded as limitations of the present analysis, but it is believed that it is much more refined than the unadjusted one.

2.2. Ignored CTs and Included CTs

Analysis of 2001 data shows that there were 1545 villages with a population of 16.8 million actually fulfilled the criteria to become a CT, but were not classified as CT as information from 1991 census was used. This number was 1380 in 2011 with a population of 14.2 million (Table 1). On the other hand, about 843 out of 3891 existing CTs in 2011 (21.7 %) failed to clear the threshold barrier in the actual data. In 2011, while decomposed¹², it can be observed that 9 CTs could not satisfy any of three criteria, while about 275 CTs could not reach the population criteria and 461 CTs had a male non-farm workforce below 75 percent (Fig. 2b). It is interesting to note that only 16 CTs of 2011 failed to attain only the density criteria. This is actually thought-provoking, regarding the role of alternative density measurements to determine urban areas in India, rather than the traditional population density estimates. Attempts made by other researchers in this line ([Denis and Marius-Gnanou, 2011](#); [Economic Survey Vol. II, Gol](#); p.224), have predicted the urbanization rate to be as high as 63 percent at the national level¹³.

The exclusion or inclusion of settlements across the rural-urban frame is also a by-product of the stringency of the urban definition. For example, about 11 percent of the ignored CTs had a population of 3500 to 4000 in 2001, and they could have added about 0.9 million population to urban area if the threshold limit were lowered to 3500, instead of 4000. Similarly, about 14 percent of these settlements had a male main non-farm share of 70 percent-74 percent, and were marginally excluded to be part of the urban frame of 2011. Similarly, out of the 843 included CTs, about 23 percent reported a male main non-farm share between 75 percent-80 percent in 2001, and eventually their share fell below 75% in 2011 census¹⁴.

Table 1 represents the state-specific variation of CTs which are belong to 'included' and 'ignored' category in 2011. It can be observed that CTs in the states like West Bengal, Tamil Nadu, Uttar Pradesh, Kerala, Maharashtra, Odisha and Jharkhand has a very dynamic pattern of transformation, where a lot of CTs came up within 2001-11, but a lot of them may get declassified as well by the eve of the forthcoming census. West Bengal, which have 780 existing CTs in 2011, may lose about one-fourth of them (24.2%) during the next census. However, the net impact of such change may not

¹² The numbers shown in this decomposition include CTs which can be disqualified as a result of their failure to attain any one of the three criteria or any combination of them. For example, out of 289 CTs which reported population below 5000, 213 could not qualify only the population criteria, while the other 76 failed to pass the population and any other(s) criteria. Hence, adding them up will not equal to 736 total CTs which failed to qualify any of the three thresholds to be urban after census 2011.

¹³ The e-geopolis study Denis and Marius-Gnanou (2011), predicted a 37% urbanization rate in comparison to the official rate of 27% (2001), by using the contiguous built-up densities instead of the population density. The Economic Survey (Vol. II) predicts urbanization to be 63%, if calculated on the basis of three spatial parameters; a) 4 contiguous cells with a density of at least 1500 persons/sq.km, b) minimum of 50,000 persons per cluster and c) density of built-up area greater than 50%.

¹⁴ There are two villages in the Madhubani district of Bihar, namely Satghara and Pandaul which can be exemplified to explain the effect of a stringent urban definition. The village Satghara became a CT in 2011. It had a population of 6,900 in 2001, and a male main non-farm workforce of 1,315, which constituted 86 percent of its total male main workforce. On the other hand, Pandaul had a population of 26,601 in 2001, but only had 2246 male main non-farm workers. Pandaul could not qualify as a CT, despite being a significantly larger settlement and having a larger male main non-farm workforce than Satghara, as the share of those non-farm workers to its total male main non-farm workforce was only 46 percent.

be high as the number of ignored CTs are also high in most of these states that may fill up the spaces resulted from declassification.

Table 1: State-wise Distribution of Ignored and Included CTs (2011)

State	Ignored CTs		Included CTs	
	No.	Population (million)	No.	Population (million)
Tamil Nadu	198	1.67	77	0.59
Kerala	191	3.85	58	1.11
West Bengal	133	1.17	189	1.36
Uttar Pradesh	128	1.06	73	0.49
Maharashtra	117	1.26	46	0.37
Karnataka	74	0.60	39	0.31
Bihar	61	0.47	21	0.12
Rajasthan	60	0.59	23	0.16
Jharkhand	56	0.39	40	0.24
Andhra Pradesh	50	0.57	35	0.36
Gujarat	48	0.45	38	0.29
Jammu & Kashmir	47	0.33	17	0.09
Assam	29	0.19	45	0.28
Punjab	29	0.23	20	0.10
Haryana	27	0.19	16	0.11
Madhya Pradesh	21	0.15	21	0.14
Odisha	18	0.11	48	0.28
Others	93	0.89	37	0.21
INDIA	1380	14.17	843	6.61

2.3 Regional Distribution of CTs over time

Using the methodology discussed in the above section, we found that there are 2231 villages that fulfil the census criteria to become a CT in 2021, and together, they have a population of 17.9 million (Table 2). This is slightly lower than the new CTs of 2011 (2600)¹⁵ but much higher than the total number of CTs which were there at 2001 (1362). Though these upcoming CTs cannot be strictly compared with the current population of the existing batch of CTs, they are smaller in size than the new CTs that came up within 2001-11, if their mean population is compared, which is 9330 for the new CTs of 2011 and 8037 for the upcoming CTs of 2021¹⁶.

One of the conspicuous characteristics of the distribution of CTs in India that they tend to concentrate regionally. State-wise distribution over time shows more upcoming CTs are growing where older CTs are existent¹⁷. The existing geographical spread of them will only increase, rather than the growth of newer hot spots (Figure 2b). The highest number of upcoming CTs would come up in West Bengal (285), followed by Tamil Nadu (275), Uttar Pradesh (251), Kerala (200) and Maharashtra (159) and these five states would account for almost half of them

¹⁵ The total number of new CTs in 2011, as considered in this paper, is slightly more than official number of 2532. This is because the authors were able to match some previously unmatched CTs.

¹⁶ While comparing the mean population, the population of the time when each of these batch of settlements are identified as a CT have been considered. Hence, 2001 population for the new CTs of 2011 and 2011 population for the upcoming CTs of 2021 have been considered. The difference in means are statistically significant at 1% level.

¹⁷ This finding also corroborates with Pradhan (2013), who found positive and statistically significant association between number of existing CTs (CTs of 2001) and number of new CTs (CTs came up within 2001-11) in a district.

Table 2: Distribution of Existing and Upcoming CTs and their Population as per Census 2011

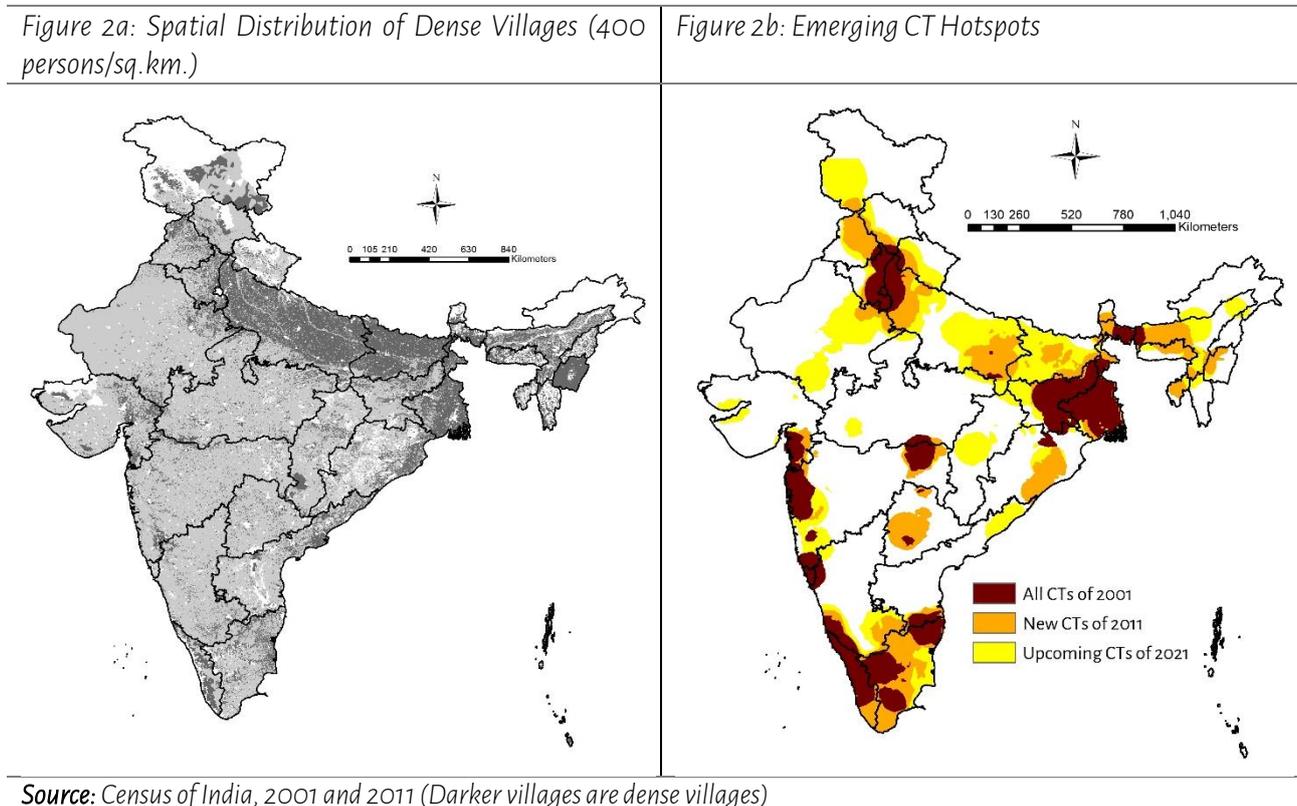
States	Total CTs in 2011		New CTs in 2011		Upcoming CTs in 2021	
	No.	Population (million)	No.	Population (million)	No.	Population (million)
West Bengal	780	7.94	526	4.65	285	1.84
Tamil Nadu	376	5.00	271	2.90	275	2.01
Uttar Pradesh	267	3.56	206	2.16	251	1.60
Kerala	461	10.30	346	7.40	200	3.89
Maharashtra	278	4.02	171	1.99	159	1.45
Jharkhand	188	2.58	107	0.88	118	0.66
Karnataka	127	1.23	81	0.73	107	0.74
Bihar	60	0.49	52	0.43	100	0.64
Rajasthan	112	1.24	76	0.80	93	0.73
Jammu & Kashmir	36	0.27	27	0.20	92	0.53
Assam	126	0.97	80	0.55	85	0.44
Andhra Pradesh	228	4.12	137	2.28	67	0.65
Gujarat	153	1.77	83	0.88	62	0.51
Uttarakhand	41	0.49	29	0.32	54	0.44
Punjab	74	0.69	55	0.50	48	0.31
Odisha	116	0.83	86	0.57	46	0.24
Haryana	74	0.91	49	0.50	45	0.27
Madhya Pradesh	112	1.11	46	0.40	40	0.24
Chhattisgarh	14	0.14	10	0.08	25	0.13
NCT Delhi	110	4.97	55	1.14	18	0.21
Others	159	1.67	107	1.01	61	0.41
INDIA	3892	54.28	2600	30.38	2231	17.93

Source: Authors' computation from Census of India, 2011

The regional concentration of CTs should be looked from the angle of how urban is defined in India. While the criteria for defining STs are flexible and varies from state to state, the identification of CTs is based on discrete demographic and economic thresholds throughout the country. In a physically and socio-demographically diverse country like India, this uniform definition cannot address the spatial variation in the process of rural to urban transformation. There are differences in the average size and density of villages, which is higher in the Indo-Gangetic plains than any other parts of the country (Figure 2a). For example, about 58 percent of the villages which have a population of 4000 and a density of more than 400 persons/sq.km are concentrated in four states: UP, Bihar, West Bengal, and Jharkhand.

Broadly, there are two kinds of spaces where the process of rural to urban transformation is visible. The first one are the areas where there are a lot of ignored CTs are present, which will eventually show up as upcoming CTs of 2021. As evident from Table 1, these are the states where a lot of CTs came up within 2001 and 2011, and they also include a lot of CTs that failed to satisfy the urban criteria in 2011. These are the areas where the process of rural to urban transformation is dynamic, and the rural workforce usually moves back and forth within farm and non-farm. These are centred on West Bengal, Kerala, Tamil Nadu, Bihar and some parts of UP. The second group constitutes those places where not only the rural non-farm activity is already high, but are also growing more than the national average. These are the areas where some new set of villages can come up as CTs, which are not actually 'ignored CTs' from the

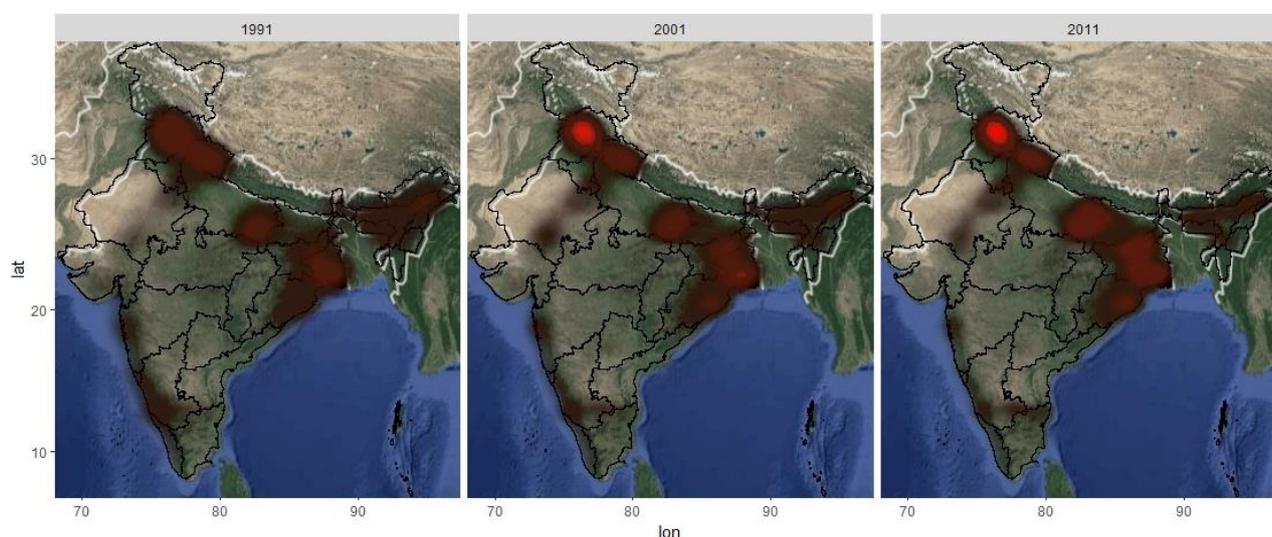
previous census. These two patterns are spatially associated over the last decade in areas like parts of Tamil Nadu, NCR-Mumbai corridor, and parts of coastal Maharashtra, Eastern Uttar Pradesh, and Jharkhand. There are some parts of the country where none of these two patterns are visible, which include most of the hilly states, Madhya Pradesh, Chhattisgarh, inland Odisha, Andhra Pradesh, Telangana, or Vidarbha region of Maharashtra. Most of these areas are characterised by a higher growth of farm work than non-farm in rural areas, and the incidence of larger or denser villages is less (Figure 2a).



The regional distribution of CTs are, therefore, linked not only to the way the CTs are defined, but also to larger structural factors. Figure 3 portrays all settlements that remained rural from 1991 to 2011, and had a male non-farm participation of 50 percent or more in any or all of these years. It is notable that over a course of thirty years, this distribution is largely concentrated in some parts of the country, while very few new areas like villages around the Delhi-Mumbai Industrial Corridor (DMIC) adding up to the picture. These kind of patterns are interesting when the urbanization paradigm of a country like India is discussed, where about 37 percent of the non-farm activities are centred in rural areas (Census of India, 2011). The instability of rural non-farm labour force in large parts of the country is one of the underlying reasons for this localized concentration, which is subjected to lower wage premiums and informality of jobs, especially out of the agricultural sector. This gets reflected in the process where people move out of agriculture, but not necessarily from rural to urban¹⁸, as the required benchmark is not achieved. A detailed discussion regarding this has been done in the sections dealing with economic characteristics of the CTs.

¹⁸The share of agriculture in GDP has fallen from 52 percent in 1950-51 to less than 16 percent in 2014-15, while the urbanization increased only 3 percentage points over the last decade.

Figure 3: Spatial Distribution of Villages with High Rural Non-Farm Workforce (More than 50 percent)



Source: Census of India, various years.

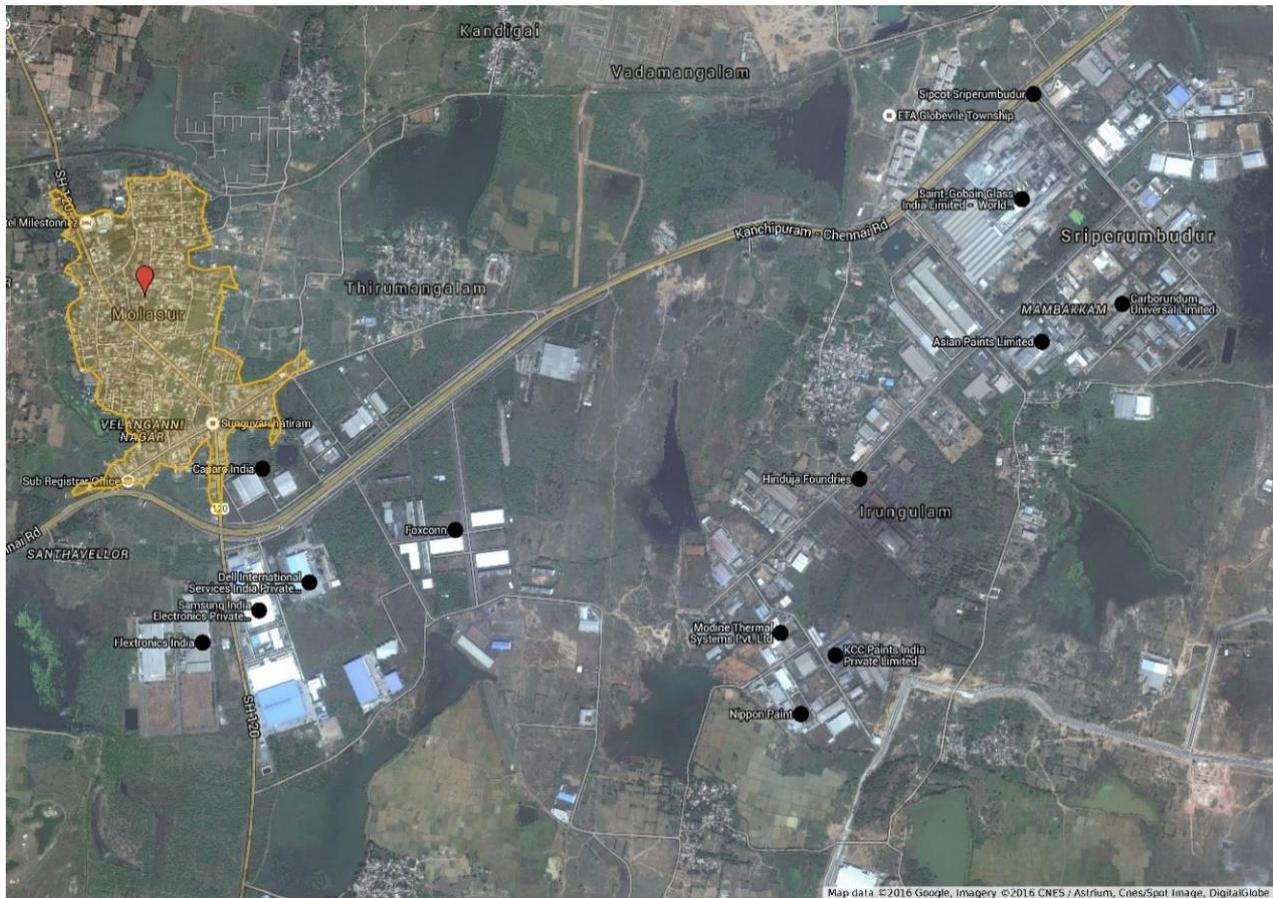
Note: Shaded areas consist villages with more than 50 percent male non-farm workforce. The redder the spots are, the density of such villages is higher. The blacker spots refer to low density of villages.

3. SPATIAL CHARACTERISTICS OF CTs

Molasur is a CT situated ten kilometres away from Sriperumbudur on the Kanchipuram - Chennai Road (part of AH-45) in the state of Tamil Nadu. It is 25 km away from Kanchipuram and 60 km away from Chennai. As per Census 2011, 97 percent of the total male workforce (main) in this place were engaged in non-farm activities; and the rental housing is close to 40 percent, referring to the economic pull exerted by the settlement. However, the situation was very different two decades ago. People were dependent on agriculture for living as only 60 percent of the male workforce (main) in 1991 were engaged in non-farm activities. Employment opportunities started to increase by mid-90s as several national and multi-national companies including Dell, Samsung, Flextronics and Foxconn established their plants in and around Molasur and within ten years the share of male main non-farm workforce increased to 90 percent (in 2001). Since the current census uses the data from the previous census for the identification of CTs, it could only be identified as a CT in 2011. Molasur is only one of many villages close to large urban areas whose character is changing very fast, by virtue of its locational properties, as evident from Figure 4. Sometimes it can either result of shift of economic activities from urban areas to neighbouring rural areas due to several urban restrictions or diseconomies associated with large urban areas (Vishwanath et al, 2013; Ghani et al., 2014), or due to real estate growth (Mukhopadhyay et al; 2016).

The locational aspects of CTs in relation to existing large urban areas becomes important, taking into view the sustainability of non-farm employment and future growth of CTs. Proximity to urban areas takes into consideration a number of other factors which are vital for a settlement to sustain as a CT in the long-run; some of which are its economic footprints in the form of large manufacturing complexes or industrial areas, improved transport and communication network, or a commuter-based pattern of growth (Sharma and Chandrasekhar, 2014). Apart from these, there is a different class of CTs which are purely non-proximate to large towns and grows by a 'vibrant people-driven, market-centred process' of its own (Mukhopadhyay, 2013).

Figure 4: Molalur Census Town (2016) and the surrounding Industrial Landscape

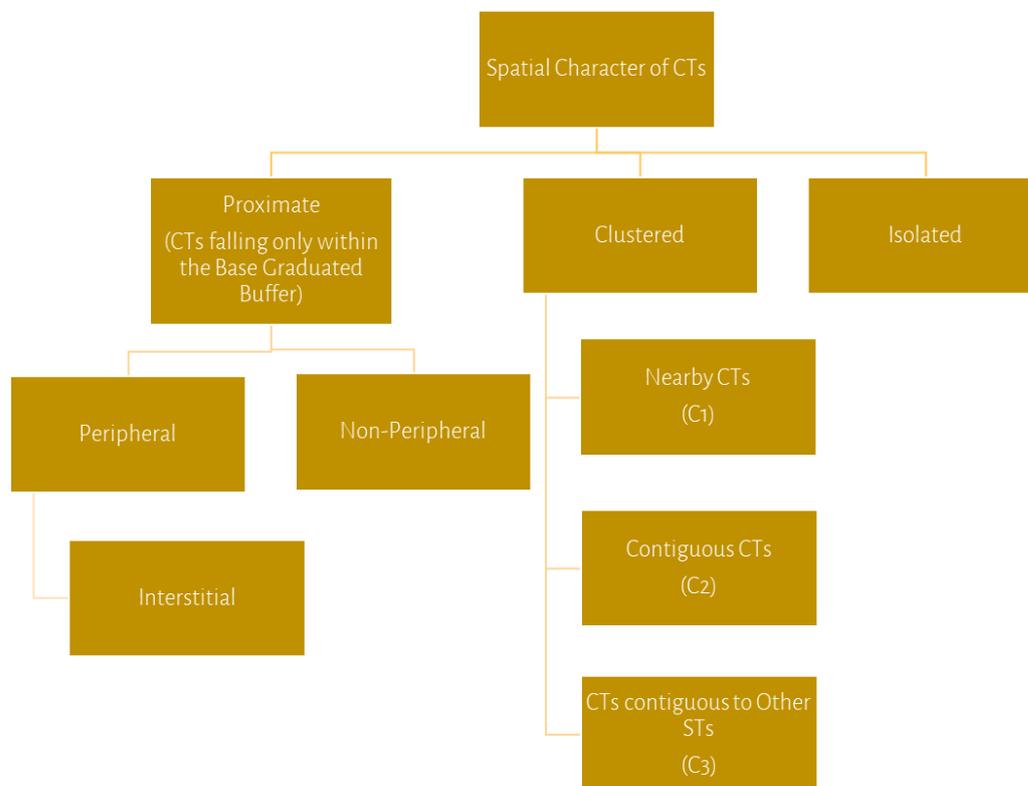


Source: Google Earth Imageries, accessed at Dec, 2016

However, the spatial pattern of the CTs are more layered in nature, given the fact that there are other factors like connectivity, place based policy variables focused on industrial and infrastructural development in backward regions, return migration of skilled labourers from urban areas, or remittance based economies which may affect mushrooming of these in-situ urban areas. For example, the existence of industrial estates in sub-districts of industrially backward regions like Odisha has shown better outcome in non-farm work and infrastructure provisions than the sub-districts where those estates are not present (Mukhopadhyay and Roy, 2015). In most of these cases, such neighbourhood level effect results into a variety of spillovers that often results in interesting morphological outcomes like localized urban clusters or spatially contiguous development of CTs between two large urban areas. The present analysis attempts to provide a more stylized classification of the same, in order to highlight the different spatial processes that undergird the existing and upcoming development of CTs in India. In order to do so, we have used multiple spatial criteria of a CT in relation to its neighbourhood, which includes distance buffers around large STs, spatial contiguity of the CTs to other urban areas and their distance to nearest neighbours. After analysing the co-locations of the upcoming and existing CTs with the large urban areas and to each other, four different kinds of pictures become evident: a) Proximate CTs which are growing under the shadow of large urban areas, described by a base distance buffer as applied by Pradhan (2013), b) Peripheral and interstitial CTs which are a subset of proximate CTs but forms the urban fringe of one or more STs, c) Clustered CTs which does not fall into proximity of large STs but are spatially contiguous or falls very close to each other and smaller STs, and d) Isolated CTs which are not neighbouring any other urban areas (including other CTs). Figure 5 provides a schematic description of this

classification. We discussed each of them separately in the following sections and thereby attempt to provide a summarized picture to represent the diverse spatial characteristics of in-situ urbanization in India.

Figure 5: Schematic Representation of Spatial Characteristics of CTs



Source: Authors.

3.1 Proximate CTs

Pradhan (2013, 2017) in his study has shown that about 37.2 percent of the new CTs of 2011 falls in the proximity of the Class-I towns. Using his methodology that involves buffers of varying distances around different size-class of towns¹⁹, it can be seen that 42.3 percent of the existing and upcoming CTs and 47.4 percent of their population reside in the proximity of the Class-I towns²⁰. The shares of such proximate CTs are 38.5 percent, if we consider the new CTs in 2011²¹ and 41.6 percent for upcoming CTs in 2021. If all CTs near to Class II towns are incorporated, the share of proximate CTs rises up to 50.9 percent, which covers 56.5 percent of their population (If looked over years, this includes 47.0 percent for new CTs in 2011, and 49.5 percent for upcoming CTs in 2021). A first look at these results highlights the importance of proximity both in terms of number and population. However, given the difficulties in adjusting the number and area of large STs (STs with a population of 50,000 or more) it is difficult to comment on

¹⁹ For detailed methodology and its limitations, see Pradhan (2013). Also by distance, here it refers to straight line distance than actual travel distance.

²⁰ As mentioned above, all these and following estimates in the text are based on the 'Base graduated buffers (Case I)'.

²¹ This number differs a little from Pradhan (2013) due to addition of some previously unmatched CTs and slight change in accuracy of locations of some CTs.

Table 3: Proximity of Existing and Upcoming CTs by Size-Class of Towns

Town Size-Class	All CTs in 2011			New CTs in 2011			Upcoming CTs in 2021		
	Case I	Case II	Case III	Case I	Case II	Case III	Case I	Case II	Case III
> 4 million	17.2% (21.9%)	19.6% (24.1%)	12.7% (16.7%)	15.9% (16.5%)	19.4% (19.6%)	11.1% (12.1%)	13.9% (12.9%)	17.8% (17.1%)	8.4% (7.9%)
1-4 million	16.1% (19.4%)	15.4% (17.3%)	17.1% (22.1%)	16.3% (16.7%)	15.4% (15.8%)	16.8% (18.2%)	22.2% (23.1%)	20.1% (19.6%)	23.1% (24.3%)
0.5-1 million	12.1% (11.6%)	12.9% (12.2%)	11.7% (13.2%)	11.5% (12.8%)	11.8% (12.7%)	11.8% (13.1%)	12.9% (12.9%)	12.7% (13.3%)	14.0% (13.4%)
0.1-0.5 million	37.3% (31.8%)	34.7% (30.4%)	41.1% (32.5%)	38.4% (34.8%)	35.3% (32.6%)	42.0% (37.2%)	34.8% (31.6%)	33.0% (29.5%)	38.6% (34.2%)
50,000-0.1 million	17.3% (15.3%)	17.4% (16.0%)	17.4% (15.4%)	17.9% (19.3%)	18.0% (19.3%)	18.4% (19.3%)	16.1% (19.5%)	16.4% (20.5%)	15.9% (20.2%)
Total in Proximity (Class I)	1665 (27.5)	1919 (30.4)	1315 (22.3)	1002 (12.4)	1185 (14.4)	768 (9.8)	927 (6.7)	1064 (7.8)	743 (5.3)
Total in Proximity (Class I+ Class II)	2013 (32.4)	2324 (36.2)	1592 (26.4)	1221 (15.4)	1445 (17.8)	941 (12.2)	1105 (8.4)	1272 (9.8)	883 (6.7)
Total CTs	3891 (54.3)			2600 (30.4)			2231 (17.9)		

Note- Case I (Base graduated buffer): Fifty thousand to One lakh towns-5 km radius, One to Five lakh towns-10 km radius, Five to Ten lakh towns-15 km radius, Ten to Forty lakh towns-20 km radius, More than Forty lakh towns-25 km radius; Case II (expanded graduated buffer): Fifty thousand to One lakh towns-6.25 km radius, One to Five lakh towns-12.5 km radius, Five to Ten lakh towns-18.75 km radius, Ten to Forty lakh towns-25 km radius, More than Forty lakh towns-31.25 km radius; Case III (restricted graduated buffer): Fifty thousand to One lakh towns-3.75 km radius, One to Five lakh towns-7.5 km radius, Five to Ten lakh towns-11.25 km radius, Ten to Forty lakh towns-15 km radius, More than Forty lakh towns-18.75 km radius. Numbers outside parentheses are share in number of CTs in each group to Total Proximate CTs; Numbers within parentheses are share in population of CTs in each group to Total Proximate CTs. The total number of CTs considered for analysis are 6040. Disaggregated numbers are: 1291 in 2001, 2600 in 2011, and 2149 in 2021. The last three rows show population of CTs in parentheses and are represented in millions.

Source: Authors' computation from Census of India, 2011

the temporal variation of the proximity effect accurately²². But the growth of new urban hotspots in the proximity of the existing large cities can be validated from the present analysis.

There are inter-state variations in the share of proximate CTs to total CTs. States with a higher share of proximate CTs in 2001 and 2011 are going to continue the trend in the upcoming decade (Table 4). However, for some states like Maharashtra, Punjab, Chhattisgarh and Gujarat, the share of the proximate CTs in the upcoming census is going to jump significantly and it is going to drop for other states like Tamil Nadu or Kerala. It is important to mention that in case of Kerala, which is going to contribute a substantial number of upcoming CTs, the share of proximate CTs turns out to be remarkably low, which is only 22.5 percent of all the upcoming CTs of 2021.

²² The adjustments in the number, population and area of STs which changes across time have not been checked. There can be boundary expansions of towns, and some more can be added when the urban frame of 2021 census will be prepared.

Table 4: State-wise Distribution of Proximate CTs and their Population as per Census 2011

State	All CTs in 2011	New CTs in 2011	Upcoming CTs in 2021	All Proximate CTs
Jammu & Kashmir	52.8 (54.3)	48.1 (47.4)	18.5 (17.7)	36 (0.24)
Punjab	55.4 (59.6)	56.4 (66.7)	66.7 (65.1)	72 (0.60)
Chandigarh	100.0 (100.0)	100.0 (100.0)	100.0 (100.0)	9 (0.08)
Uttarakhand	65.9 (66.7)	69.0 (68.2)	53.7 (55.8)	56 (0.57)
Haryana	67.1 (72.9)	71.4 (72.9)	68.9 (67.4)	79 (0.83)
NCT Delhi	97.3 (99.6)	94.5 (98.4)	94.4 (97.5)	121 (5.02)
Rajasthan	20.5 (25.1)	22.4 (26.3)	31.2 (28.1)	50 (0.49)
Uttar Pradesh	71.5 (79.0)	71.4 (74.6)	72.9 (76.5)	370 (4.00)
Bihar	58.3 (64.4)	55.8 (62.3)	57.0 (57.3)	92 (0.69)
Nagaland	71.4 (85.7)	71.4 (85.7)	0.0 (0.0)	5 (0.06)
Manipur	73.9 (60.5)	66.7 (51.0)	87.5 (86.8)	24 (0.14)
Tripura	42.3 (51.0)	39.1 (49.1)	15.4 (13.4)	13 (0.16)
Assam	32.5 (32.3)	27.5 (29.4)	32.9 (33.7)	69 (0.46)
West Bengal	55.6 (59.4)	47.9 (51.6)	47.4 (40.4)	566 (5.42)
Jharkhand	38.3 (48.9)	38.3 (40.5)	44.9 (47.9)	120 (1.50)
Odisha	14.7 (17.0)	9.3 (11.0)	10.9 (10.0)	22 (0.16)
Chhattisgarh	50.0 (62.2)	40.0 (48.0)	68.0 (69.1)	23 (0.17)
Madhya Pradesh	44.6 (53.2)	39.1 (48.4)	52.5 (52.5)	70 (0.71)
Gujarat	62.1 (67.8)	51.8 (57.5)	64.5 (64.0)	131 (1.48)
Daman & Diu	50.0 (72.9)	50.0 (72.9)	100.0 (100.0)	5 (0.09)
Dadra & Nagar Haveli	60.0 (60.5)	60.0 (60.5)	50.0 (65.8)	5 (0.06)
Maharashtra	54.0 (63.1)	51.5 (57.7)	73.6 (81.0)	267 (3.71)
Andhra Pradesh	46.1 (47.4)	37.2 (38.2)	40.3 (38.6)	124 (2.08)
Karnataka	52.8 (58.0)	43.2 (45.2)	53.3 (49.0)	122 (1.05)
Goa	16.1 (22.8)	12.0 (18.4)	11.1 (10.4)	9 (0.10)
Kerala	37.7 (43.2)	32.1 (35.2)	22.5 (22.9)	174 (4.04)
Tamil Nadu	66.2 (76.7)	59.4 (69.0)	51.6 (53.3)	387 (4.84)
Puducherry	100.0 (100.0)	100.0 (100.0)	50.0 (52.1)	8 (0.11)
Andaman & Nicobar Islands	75.0 (92.3)	50.0 (79.0)	0.0 (0.0)	2 (0.02)
All India	51.7 (59.8)	47.0 (50.7)	49.5 (46.7)	3031 (38.88)

Note- Only numbers derived from Case I (Base Graduated Buffer) distances have shown. Figures outside parentheses are percentage share of proximate CTs to all CTs in a state. Figures inside parentheses are percentage share of proximate CT's population to total CT population of a state. The last column shows the number of all proximate CTs and their population (millions). 'Proximate CTs' refer to all CTs proximate to Class-II STs or above.

Source: Authors' computation from Census of India, 2011

3.1.1 Peripheral, Interstitial and Non-Peripheral CTs

Out of the 3118 proximate CTs which includes the upcoming ones of 2021, 53 percent share a common boundary with the large STs²³. We term all these CTs as 'peripheral CTs', and about 122 of them share their boundary with more than one town²⁴, which we term as 'Interstitial CTs.' Most of the peripheral CTs are found in Tamil Nadu (214), West Bengal

²³ The peripheral and interstitial CTs are subsets of proximate CTs. If all 4041 STs in 2011 are considered, the number of peripheral CTs raises up to 39.1% (2394) and 47.8% (34.5 million) for population, taking all existing and upcoming CTs into consideration.

²⁴ Balongi, which classified as a CT within 2001 and 2011, is one such settlement that falls between the cities of Chandigarh and S.A.S Nagar (Mohali). It has a population of 15982, as per census 2011.

(206), Uttar Pradesh (199), Kerala (167), and Maharashtra (158). About 60 percent of interstitial CTs are distributed in three states: West Bengal, Tamil Nadu and NCT of Delhi. These CTs, which are situated just outside the municipal boundaries and sometimes form corridors among some of them, are important not only from the viewpoint of spatial character of CTs but also from the angle of urban governance and service deliveries. This feature is also going to be part of the spatial character of the upcoming CTs of 2021, as currently 25 percent of them are situated in these locations, and some more can be over time. It is also noteworthy that out of 1775 peripheral and interstitial CTs, 421 (24%) are situated adjacent to Class II STs, and 61 percent along the boundaries of towns that have a population of 50,000-0.5 million, referring to substantial peri-urban growth around smaller towns. In addition to this, about 22 percent of the existing and upcoming CTs are growing as proximate but non-peripheral CTs.

3.2 Clustered CTs

The analysis discussed above shows the importance of proximity as a strong feature of CTs; but at the same time, about 49 percent of them, which also includes the upcoming ones of 2021, grow outside the purview of the large towns. However, all these areas are not completely isolated as they seem to, and many of them grow closer to each other or near to other small towns, manifesting a localized ecology of their own. Though this tendency is evident both in the case of proximate CTs and those are outside the distance buffers of large towns, we focus on the later because they are free from the biases created by the vicinity to large urban areas. We term all such CTs as 'Clustered CTs' and about 65 percent of the CTs which does not fall in the proximity of large towns are this kind of CTs²⁵. Together these clustered CTs constitute 32 percent of the total CTs (Table 5). They are defined as per three criteria: a) if any of them falls within a distance of five kilometres of other CTs; b) if any of them borders any other CT, and c) if any of them borders any smaller STs which have less than 50,000 population. About 32 percent of the upcoming CTs of 2021 are not in the purview of large towns bear the characteristics of a clustered CT. Most of the clustered CTs are found in Kerala (432), West Bengal (393), Tamil Nadu (206), Jharkhand (132), Assam (101) and Maharashtra (86), where concentrations are evident in the districts where specific industries are common.

Table 5: Different Spatial Characteristics of CTs

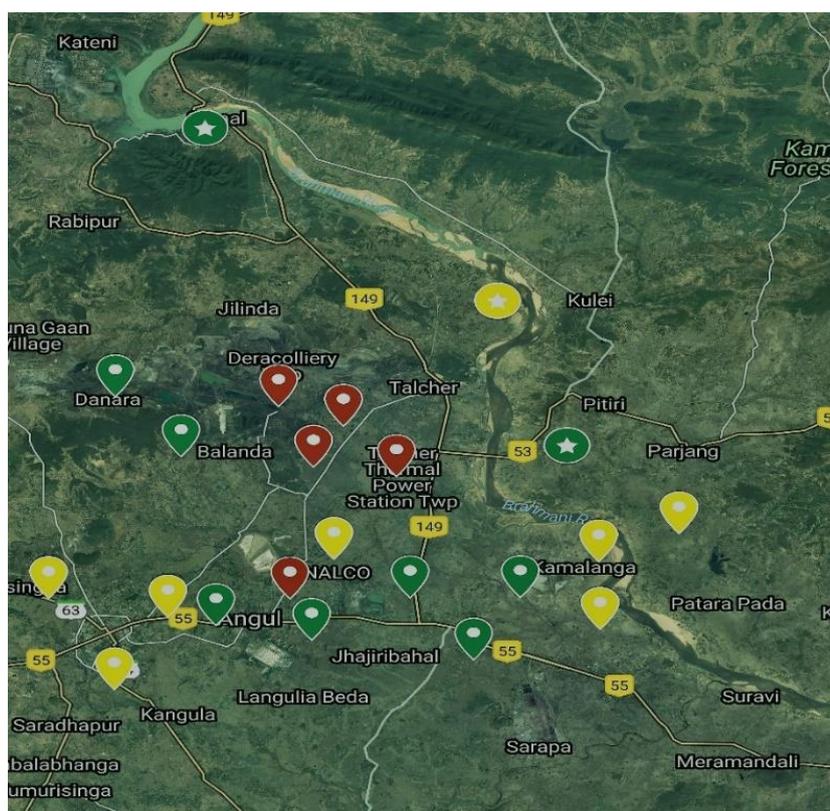
Type of CTs	All CTs of 2011	New CTs of 2011	Upcoming CTs of 2021	Total CTs
Proximate CTs	51.7% (59.8%)	47.0% (50.7%)	49.5% (46.7%)	50.9% (56.5%)
Peripheral CTs	28.8% (35.7%)	25.0% (29.7%)	23.8% (25.3%)	27.0% (33.1%)
Interstitial CTs	2.3% (6.0%)	1.5% (3.2%)	1.5% (1.7%)	2.0% (4.9%)
Non-Peripheral CTs	20.7% (18.1%)	20.4% (17.8%)	24.2% (19.7%)	21.9% (18.5%)
Non-Proximate CTs	48.3% (40.2%)	53.0% (49.3%)	50.5% (53.3%)	49.1% (43.5%)
Clustered CTs	31.7% (27.7%)	35.0% (34.2%)	31.8% (36.6%)	31.7% (29.9%)
Isolated CTs	16.6% (12.6%)	18.1% (15.1%)	18.7% (16.7%)	17.4% (13.6%)
Total CTs	3891 (54.3)	2600 (30.4)	2231 (17.9)	6122 (72.2)

Figures outside parentheses are percentage share of CTs while figures inside parentheses are the percentage share of the population of CTs. The last column shows number of all CTs considered for analysis and their population in millions.

Source: Authors' computation from Census of India, 2011

²⁵ This share does not change much if CTs that were there in 2001 are excluded, as some of them were isolated when they came into existence.

Figure 6: Role of Co-location in Growth of CTs: Picture from Odisha's Angul District



The balloons refer to 'Clustered CTs', while the stars within the circles refer to 'Isolated CTs.' The red ones refer to CTs of 2001, the green ones are CTs that came up within 2001-11, and the yellow ones are the upcoming CTs of 2021. Roads marked with yellow lines are National Highways.

Source: Census of India, 2001 and 2011, & Google Earth Imageries; accessed at September, 2017

3.3 Isolated CTs

Out of all the existing and upcoming CTs that have been considered for analysis, 17 percent do not fit any of the characteristics described above and are growing their own (Table 5). These are the places where the co-location of other urban areas does not have any significant effect, but the influence of other factors like transport networks might be present²⁶. Most of these CTs are located in the undivided Andhra Pradesh (115), Rajasthan (109), West Bengal (103), Maharashtra (84), Uttar Pradesh (79) and Madhya Pradesh (50). The share of all such CTs within the upcoming CTs of 2021 is 19 percent, though this estimate may come down over time if any new ST is created in their neighbourhood.

Table 5 summarizes the distribution by the different categories, and how it changes across the existing CTs and upcoming CTs of 2021. The spatial characteristics of the current and future CTs highlight the influence of multiple spatial processes on the trajectory of these areas, which is significantly driven by their co-location with other urban areas, and those are not necessarily large towns. Expanding the framework applied by Pradhan (2013, 2017) into other spatial criteria, it can be observed that a substantial proportion of the new CTs of 2011 are clustered CTs, which manifests some form of 'localized urbanization'. This will be true for the CTs that will come up in the forthcoming census as well (Table 5). Regional distribution of these CTs shows a lot of this kind of growth in the tea belts of West Bengal and Assam, Kerala, and industrial and mining areas of Jharkhand and Odisha. Figure 6 shows one of such

²⁶ Our analysis using the spatial data of National Highways in India shows that 54% of the existing and upcoming CTs, which are not proximate to large towns, come within 5 km radius of National Highways, which constitutes 56% of their population. In case of isolated CTs, the share of all such CTs are 45%, while 49% of their population comes under this category.

cluster in the Angul district of Odisha, around some small colliery towns, industrial areas and at the junctions of three National Highways. It is interesting to look at how the new CTs are growing by virtue of their co-location with the older towns and along the transportation corridors, which also favoured the growth of two existing and one upcoming isolated CTs at the fringe of this cluster.

4. ECONOMIC NATURE OF THE UPCOMING CTs

There is ample debate about the sustainability of the large number of new CTs that came up during the 2011 census ([Guin et al., 2015](#); [Chakraborty et al., 2017](#)); the core argument being most of them will not survive their urban functions in the long run as the growth of agricultural workers are higher in many of them in comparison to the non-farm workforce. A lot of the analyses in section two, which discussed the identification procedures of CTs, highlights that a lot of identified CTs indeed cannot sustain to be urban at a long run and will be declassified at the next census, but at the same time, a lot of new villages, mostly along the same geographical areas, can become future CTs. However, it is interesting to know how much of these future CTs are actually fresh villages that are undergoing economic transformation from farm to non-farm, or most of them are part of the pool of the villages that were actually 'excluded villages' to be CTs as a result of the stringency in census operations. A simple distribution of non-farm activities in all areas which remain rural over the course of last three censuses (1991-2011) shows that not many new villages are crossing the 75 percent benchmark for non-farm, and their number remains almost the same over last three censuses. An analysis involving the newer CTs and the ignored CTs show that about 51.4 percent of the 2600 new CTs in 2011 are actually ignored CTs from census 2001, while this share rises up to 61.8 percent for the 2231 upcoming CTs of 2021. Hence, about 40 percent of the upcoming CTs are actually the fresh pool of villages that are economically transforming as urban, and their share to total new CTs will be actually going to decrease in the forthcoming census. This refers to the fact that increasingly most of the rural-urban transformation in the country is happening due to the lag effect from the previous years, rather than an augmentation of such morphing through time.

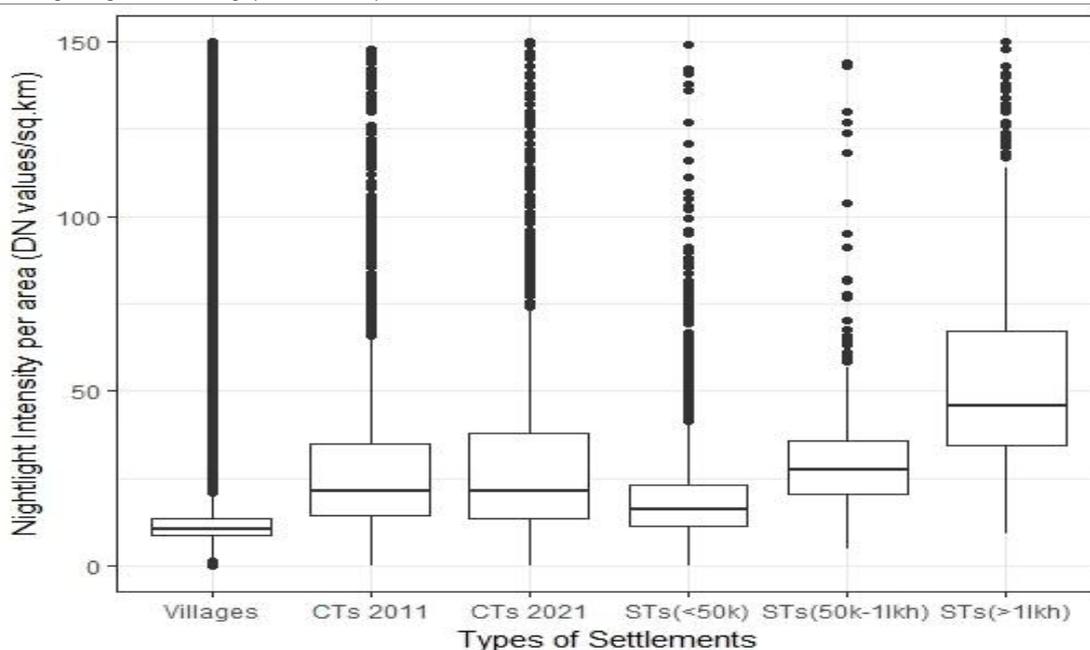
The main reason cited behind such bleak outcomes varies from arguments like CTs are the by-products of agricultural distress and are not any significant spaces where economic transformations are going on; to issues like failure of the non-farm sector to create regular wage employment or shrinking markets for the local functions. Though the logic of agricultural distress requires more empirical scrutiny involving long-term temporal datasets, the issue of variability in employment structure is evident in detailed analyses. For example, [Sidhwani's](#) (2014) analysis shows that in rural areas, not only the movement from agricultural to non-agricultural activities is an oscillating process, but also the agrarian labour market itself is fluid, where shifting happens between the self-employed and landed cultivators and the casual agricultural wage labourers. This indicates to the fact that the stability of employment in rural areas is not specific to any sectors, and people move back and forth from one to another. As per the latest estimates from NSSO survey on migration, about 41 percent of the short-term migration involves such oscillation between farm and non-farm male workers in rural areas (NSSO, 2007-08)²⁷. Structurally, such fluidity tends to remain until sufficient regular wage employment is created in the rural non-farm sector, which very much depends on the type of jobs available in the same. [Chatterjee and others](#) (2015) estimated that most of the male employment in large villages are dominated by construction, manufacturing and trade related activities, which generates a lot of casual wage and self-employment, but the regular wage employment has not been created in large numbers. From the perspective of the upcoming CTs, such trend is not sustainable if their standalone growth is concerned, as most CTs are not based on any 'anchor industries' and depend on either non-formal everyday economies or some limited sources of new

²⁷ This means out of all persons who have a history of short-term migration in rural areas, 41% have been worked interchangeably in farm and non-farm activities in terms of their current activities and activities during the longest spell of migration.

activities like public works under the NREGS or the private education, health or low-cost transport services (Mukhopadhyay et al, 2016). Most of these activities do not provide enough economic stability for a permanent migration to non-farm livelihoods, independent of any marginal or short-term participation of farm work. The growth of CTs in the upcoming decade, therefore may not be seen as a generic process of rural to an urban transformation where an increased concentration of employment in the non-farm sector may not necessarily be accompanied by a better standard of living. This is in contrary to the official definition which inherently presumes that such a shift is always associated with an improved standard of living through an increase in wage.

Since the logic of the unstable rural labour market applies to the upcoming CTs that we are predicting as well, it is necessary that we should get some evidence which will provide some reassurance regarding the functional sustainability of these places. We looked for both the distress and affluence hypothesis in this regard. In order to check whether these CTs are growing where farm jobs are not feasible, we investigated the link between the growth of new CTs and agricultural productivity of the districts where they are growing. We have not found any significant correlation between the district-wise number of upcoming CTs and its agricultural productivity²⁸, for which district-level productivity estimates of 2010 have been used. Though the district level figures are not granular enough to check this kind of hypotheses, there is at least no apparent link that upcoming CTs will mostly grow in regions affected by farm distress.

Figure 8: Nightlight Intensity per area (sq. km.) across different Settlements (2010-11)



Source: DMSP-OLS RCNTL database (accessed from https://ngdc.noaa.gov/eog/dmsp/download_radcal.html), and Spatial Database for South Asia, World Bank.

In order to check that the upcoming CTs are different in terms of their economic landscape from their rural counterparts, and are relatively better off in terms of living standard, two measures have been used. The first one is the 'Radiance calibrated night-time lights' (RCNTL) datasets released by the DMSP-OLS satellite programme, which is regarded as a good proxy measure for non-farm economic activity, especially at the subnational level where GDP

²⁸ Agricultural Productivity is measured here as yield in terms of tones/sq. km, for all major crops. The UTs and million-plus city districts have not been considered for this analysis, for which the productivity figures are available. The source of the data on farm area and production from which yield have calculated is the 'Crop Production Statistics Information System' of the 'Directorate of Economics and Statistics, Ministry of Agriculture and Farmer's Welfare, GoI'; (accessed at <http://aps.dac.gov.in/APY/Index.htm>).

and workforce data are limited (Henderson, 2009; Mellander, 2015). Though the granularity of this data below the district level is not much verifiable yet and the correlation of this data with wages are weak (Mellander, 2015), interesting variations across different kind of settlements can be observed (Figure 8). The night-time light intensity per area is calculated by aggregating the radiance calibrated night intensity values for a specified geography, and is expressed by digital numbers per area (DN values). It can be observed that there are substantial differences in the distribution of nightlight intensity per area across settlements, with both the new CTs of 2011 and the upcoming CTs of 2021 showing higher intensity than villages, and even than the smaller STs, which have a population of less than 50,000. The median nightlight intensity in case of Class-I STs are well above the others, and STs with a population of 50,000 to 1 lakh are slightly higher than the CTs of 2011 and upcoming CTs of 2021. Other than the fact that CTs come out different in terms of nightlights than their rural counterparts, the variation across all distributions show the fluidity of economic activities across the rural-urban spectrum, where some villages and CTs show equally high intensity of nightlights like larger towns, going up to 150 DN values/sq.km. This broadly aligns towards the studies claiming diffusions of non-farm activities like formal manufacturing, from urban to rural space (Chani et al, 2012)²⁹.

Table 6: Household Amenities and Assets by Villages, CTs and STs of Different Size-Class

Settlement Type	Population Size	Good House	Rented House	Tap Water	In-house Water	In-house Latrine	LPG as fuel	Bank Account	TV	Two-Wheelers
Village	< 4,000	44%	2%	29%	31%	26%	9%	55%	30%	14%
	4,000-10,000	48%	4%	37%	40%	34%	14%	52%	37%	15%
	>10,000	50%	7%	32%	51%	50%	19%	54%	43%	15%
CT 2021 (Upcoming)	<10,000	58%	17%	45%	48%	59%	38%	58%	59%	25%
	>10,000	64%	14%	40%	67%	81%	38%	65%	70%	25%
CT 2011+CT 2001 (Existing)	<10,000	59%	18%	46%	52%	68%	41%	62%	63%	26%
	>10,000	67%	24%	50%	65%	83%	55%	66%	75%	31%
Statutory Towns	<10,000	61%	19%	65%	49%	56%	45%	61%	66%	25%
	10,000-20,000	60%	17%	64%	53%	61%	45%	60%	67%	26%
	20,000-50,000	63%	20%	64%	63%	70%	52%	62%	67%	29%
	50,000-100,000	67%	27%	67%	66%	78%	62%	62%	73%	32%
	>100,000	71%	31%	78%	78%	86%	73%	71%	81%	39%

Source: Authors' computation from Census of India, 2011 (Tables on Houses, Household Amenities and Assets)

The second measure than has been used are the various indicators related to household assets and amenities from census 2011, which can be a proxy of the economic well-being in the settlements, as there are no reliable datasets on income, consumption or wage at settlement level. The outcomes for the upcoming CTs have been compared to three other control groups: the villages of similar size-categories, the existing CTs of 2011, and statutory towns belonging to various population size-classes. It can be surmised from the results that while the upcoming CTs are better in terms of access to public amenities and ownership of private assets than the villages, they are still lagging behind than the

²⁹ The distribution of nightlights across proximate and non-proximate CTs of 2021 have also been checked, which suggests better urban nightlight intensity per square kilometres in case of proximate CTs than non-proximate CTs, thereby confirming the role of agglomerations in the growth of these areas. The DN values for Figure 8 are trimmed to 150 for a better visualization of the distribution.

older CTs. Both existing and upcoming CTs are equal or slightly better in some aspects than smaller STs, like access to in-house latrines or water within the household premises (Table 6). The better public amenities in CTs, which are effectively part of the Gram Panchayat structure, than the STs, can be generally explained by the higher federal funding in rural areas (Mukhopadhyay, 2017). However, within the rural governance framework, the CTs, which involves the upcoming ones as well, comes out to be relatively affluent than the villages.

Since a large chunk of upcoming CTs are supposed to come up at the proximity of large STs, we checked that whether controlling for proximity masks the difference between the upcoming CTs and villages. Table 7 shows that though there are differences between upcoming CTs which are in proximity to large urban areas and which are not, the situation of both proximate and non-proximate CTs are better than villages of same size-groups when compared with Table 6. As many of the upcoming and non-proximate CTs are actually clustered CTs, this finding is interesting from the standpoint of certain studies (Chakraborty et al, 2017) which argues co-location actually does not favour new CTs to sustain by creating a shrinking market for their rural neighbourhoods; which is not necessarily borne out by the data, at least at the macro level. However, this logic cannot be effaced completely as in some places where the density of the CTs are high; like West Bengal or Kerala, where proximity and co-location might be beneficial to raise non-farm participation together at a cluster of neighbouring settlements, rather than individual villages.

Table 7: Access to Selected Amenities and Assets by Proximity of CTs

Settlement Type	Population Size	Rented House		Tap Water		In-house Latrine		Two-Wheelers	
		P	N	P	N	P	N	P	N
Upcoming CTs of 2021	<10,000	20%	13%	47%	43%	63%	54%	29%	20%
	>10,000	22%	9%	50%	32%	79%	83%	29%	23%
Existing CTs of 2011	<10,000	19%	17%	47%	45%	72%	66%	28%	24%
	>10,000	28%	19%	54%	43%	85%	80%	33%	25%

P: Proximate; N: Non-proximate

Source: Census of India, 2011 (Tables on Houses and Household Amenities)

5. CONCLUSION

This paper attempted to provide a structured approach to interpret the dynamics of CTs in India over a temporal framework. Drawing inferences from the detailed settlement level information, it tried to work out the future discourse of CTs and thereby compared them to the existing batch of CTs, in terms of their spatial and economic characteristics to trace out any generalized patterns that are visible over time. It can be observed that though some of the new CTs of 2011 no longer satisfy the criteria to be urban; at an aggregate level, there seem to be not much loss in numbers in the future as a sizeable number of existing villages are also potentially be classified as CTs in the upcoming census. According to the estimation, there will be 2231 of such CTs in the upcoming census and their regional distribution will be similar to existing CTs. Though the variation in economic activities is high in rural areas, the rural non-farm activities are in the form of self-employment is still high and stable, especially in large villages (Chatterjee et al, 2015), which might be driving the growth of these upcoming towns. These upcoming CTs are also relatively prosperous than their rural neighbourhoods, as evident from the analysis. Field based evidence show this prosperity can also be attributed to factors like circular migration and remittances, which drives urbanization away from large cities through bringing back economic and cultural resources to the villages (Iyer, 2017). The factor of co-location is also important in the growth of a lot of these future CTs, which is also visible from the analysis. More than 40 percent of these upcoming CTs are currently in the proximity of the Class I towns and a lot of them which are currently not in proximity of any large towns are growing under the shadow of older CTs. This particular trajectory of urbanization in India is important and bears significant potential for further research.

The future discourse of CTs in India calls for more attention for the development of these rurally administered urban areas which is driven by a variety of processes. There are a number of issues that are important in this regard. These spaces are transforming, both socially and economically. The economic transformation is not unidirectional but can be less unstable if some measures are provided. The provision of infrastructure is one of these key drivers. Infrastructure like rural roads can push up the value of the land and can be immensely useful to introduce the rural wage labourers to larger and previously unexplored urban labour market ([Asher, 2016](#)). The regional concentration of CTs show that they are coming up in the places like the Indo-Gangetic plains, which have good quality agricultural land. Since there is a lot of dynamics within agriculture as well, investments in agricultural infrastructure can be useful, which can escalate the returns from land and might encourage people to take up more diverse non-farm activities. The increasing mobility in these areas are also a marker of individual aspirations, and some investment in the development of human capital can be useful ([Jodhka and Mukhopadhyay, 2018](#)). One of the other activity which is flourishing in these places are investments in housing and construction, which can be encouraged by not only providing support to rural housing, but also reducing the disjoint in terms of basic services provided to places which are governed as urban (STs) and counted as urban (STs and CTs). The recently launched 'Shyama Prasad Mukherjee Rurban Mission' (SPMRM) proposes a more integrated approach, which is targeted at infrastructural development and employment generation of villages which are potential growth centres and are spatially contiguous to each other. The mission aims the development of 300 such clusters, which is significant given the nature of co-locational properties of the existing and upcoming CTs. Although it have not been checked that the detailed characteristics of the clusters that have been considered under this mission so far and whether any of them matches with the upcoming CTs that have been identified, this scheme may take an important role in shaping the urbanization pattern of CTs in future. The study of the mission in greater detail with special reference to CTs and its socio-economic impacts over such settlements over time can be some of the potential avenues for future research.

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ABSTRACT

The surge in census towns (CTs) during Census 2011 has drawn a lot of attention to the ongoing and future dynamics of these in-situ urban settlements in India. Using the village level information from the previous and current censuses, the present study attempts to identify the villages that can be classified as a census town in 2021. While the prevailing dataset bears some obstacles for a neat identification of such settlements, it can be observed that a fairly high number of rural areas may be classified as CTs in future, which currently accommodates a population of 17.9 million. While the current nature of regional distribution of these areas may not vary much over the future, their areal characteristics over time portray multiple spatial processes undergirding India's urban trajectory. A lot of these prospective CTs are also relatively prosperous than their current rural neighbourhoods, which reinforces the persistence of similar pattern of urban transformation in future.

Keywords: Upcoming Census Town, Spatial Process, Urbanization, India