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Unacknowledged Urbanisation: The New Census Towns of India

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Abstract

The unexpected increase in the number of census towns (CTs) in the last census has thrust them into the spotlight. Using a hitherto unexploited dataset, it is found that many of the new CTs satisfied the requisite criteria in 2001 itself; mitigating concerns of inflated urbanisation. The new CTs account for almost 30% of the urban growth in last decade, with large inter-state variations. They are responsible for almost the entire growth in urbanisation in Kerala and almost none in Chhattisgarh. Consequently, the estimated contribution of migration is similar to that in previous intercensal periods. Further, while some new CTs are concentrated around million-plus cities, more than four-fifths are situated outside the proximity of such cities, with a large majority not even near Class I towns, though they form part of local agglomerations. This indicates a dispersed pattern of in-situ urbanisation. A growing share of urban population in these CTs is thus being governed under the rural administrative framework, despite very different demographic and economic characteristics, which may affect their future growth.

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Introduction

The release of urbanisation figures from Census 2011 has evoked several reactions. For the first time the absolute growth in urban population (91 million) is more than its rural counterpart (Figure 1a) and slightly higher than expected (Kundu 2011b; Bhagat 2011). The urban growth rate, which fell in the last two decades, also rose in this census. But the major surprise came with the number of census towns (CTs) rising from 1362 to 3894, while the number of statutory towns (STs) increased marginally from 3799 to 4041 (Figure 1b). Up to 2001, the focus on CTs was limited; as their share in the total urban population was low (7.4% in 2001) and their numbers were growing gradually. However, the sudden increase in the number of CTs has highlighted the need for more attention to this class of settlements. This paper uses a hitherto unexploited dataset to examine the nature of these new CTs, their size and contribution to population and their location in relationship to existing urban centres.

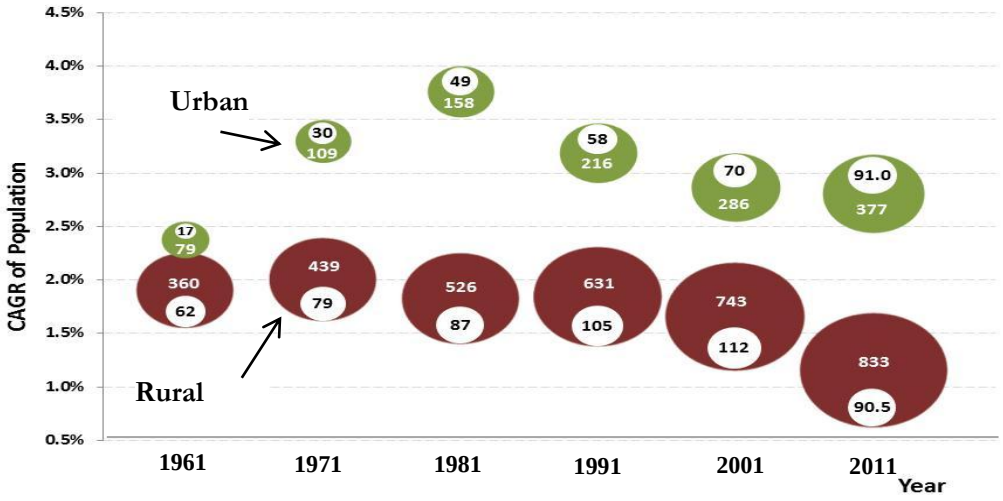
Definition of Census Towns

Urban areas in India are of three broad types; STs, CTs and out-growths (OGs). STs are administratively declared urban areas by a state law which includes all manner of urban local bodies, such as municipalities, town panchayats, cantonment boards, etc. CTs are complete settlement units that are classified as urban areas by the Registrar General of India, as part of the census operations, if they cross the threshold on three specific urban characteristics, viz. size (population of at least 5,000), density (at least 400 persons per square kilometer) and non-farm nature of workforce (at least 75% of male workforce in non-farm sector). However, settlements declared as CTs continue to be administered as rural areas. OGs are viable units which emerge adjacent to but outside the administrative limits of STs. These are however not complete settlement units, like an entire village. [1] Since the census schedules for urban and rural areas are different, settlements are identified as CTs *before the start of the census operations*. The methodology used to identify settlements as CTs is neither transparent nor uniform and this had led commentators to speculate that the urbanisation for 2011 may have been artificially inflated (Kundu 2011b).

Data and Methodology

The Census provides a unique code for all settlements in India, with separate groups of code for the urban and rural sector, to facilitate comparison between censuses. But for some settlement units there is also a change in the sector between census periods, i.e., some rural units become urban or vice-versa. As these units move from one group to another, their census code changes from one group to another. A common classification across census periods for such units is needed to make them comparable across census periods. Such a classification is available at the e-Governance Standards portal (http://egovstandards.gov.in), part of Government of India's National e-Governance Plan (NeGP), which provides lists of all settlement units in 2011 and their correspondence with the 2001 census. This list has been prepared by the Census of India.[2] The portal provides state wise lists of all settlement units for 2011, separately for rural and urban areas, and their corresponding 2001 census code. This database could be considered as a rich source for comparative study between 2001 and 2011 census until the detailed publication from RGI.[3] This analysis covers all the states of India, but it should be noted that Mizoram had no CT in either 2011 or 2001.

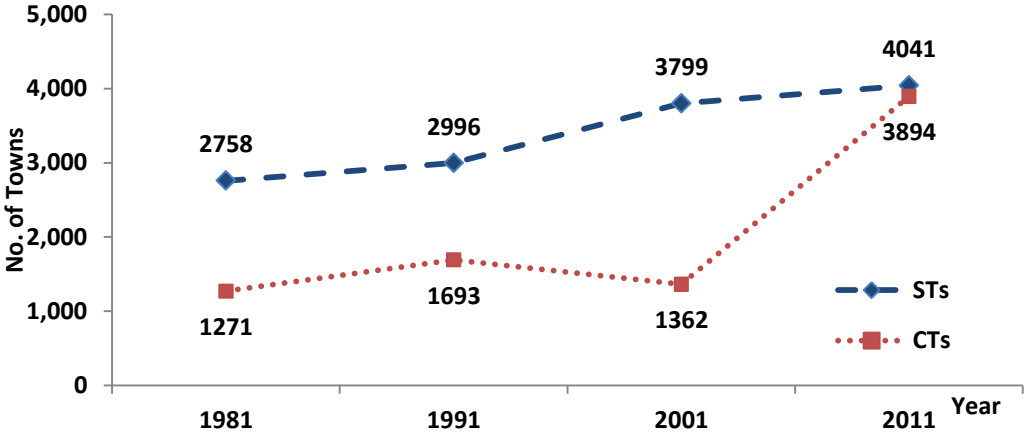
Figure 1a Rural and Urban Population Growth 1961-2011



Note: The outer bubble shows the total population (in million) and the inner bubble shows the increase of population (in million) with respect to the previous census. CAGR is the compound annual growth rate.

Source: Census of India 2011

Figure 1b: Types of Urban Settlements 1981-2011



Source: Sivaramakrishnan, Kundu, Singh (2005) and Census of India 2011

Matching of Settlements

The e-Governance dataset facilitates matching of 2011 CTs with the corresponding 2001 settlement units. But there are other units which are also important for this study. Some units which were classified as CT in 2001 no longer exist in 2011 because either they have been de-notified to villages or reclassified as statutory towns or merged with other units. The first two types of issues (de-notification to villages and reclassification into statutory towns) can be addressed with the e-Governance dataset, but it is not useful to match the CTs in 2001 that were merged in to other units. For this, we use publicly available information. Even though the attempt was to use official sources like ULB websites, city development plans, state government notifications and other official

documents, there are 35 such CTs for which news articles and other sources from internet were used, which could not be independently verified.[4]

Origin of Census Towns

The changes in the number of CTs between census periods can happen in many ways, e.g., an increase due to reclassification of villages and OGs, and, rarely, STs into CTs,[5] and a decrease due to de-notification of existing CTs to villages, re-classification or amalgamation of existing CTs into STs.

As can be seen from Table 1, while the absolute increase of CTs between 2001 and 2011 for the country is 2532, the number of settlements re-classified from village to CT (henceforth new CTs) is 2553 and an additional 141 settlements have been re-classified from OG or ST to CT. Since 48 CTs could not be matched between 2001 and 2011, the actual number might be slightly higher. Concomitantly, 55 CTs have been de-notified to villages and 144 CTs have been recognized as STs or merged with other STs in this period. In terms of distribution of the new CTs across states, the state with maximum number of new CTs is West Bengal (526) followed by Kerala (346), Tamil Nadu (227) and Uttar Pradesh (204). Along with Andhra Pradesh and Maharashtra, these six states have more than 60% of the new CTs. Arunachal Pradesh and Chhattisgarh are the only states where the total number of CTs has reduced over this period. In Arunachal Pradesh all 17 CTs of 2001 were converted into notified towns in 2011 and one new CT was created in this period. In Chhattisgarh 13 out of 22 CTs in 2001 were merged into other STs even as 10 new CTs were added in this period. It appears from this analysis that most of the CTs (more than 90%) were former villages and further, very few CTs (about 15%) are actually given statutory status whether by recognition or merging. If this trend continues, a progressively smaller share of urban settlements will be governed as urban areas.

Figure 2a: Characteristics of New CTs (Village population threshold of 5,000)

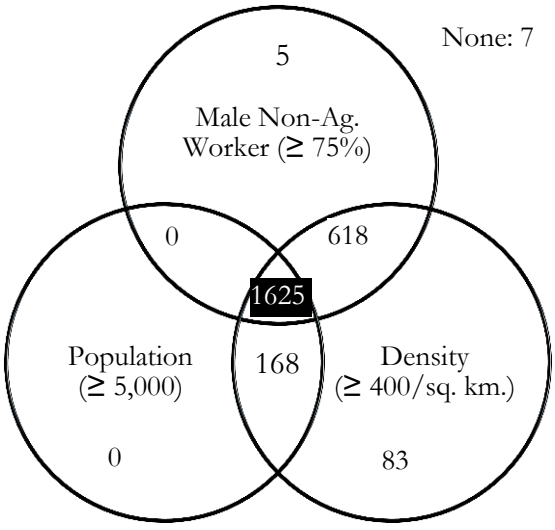
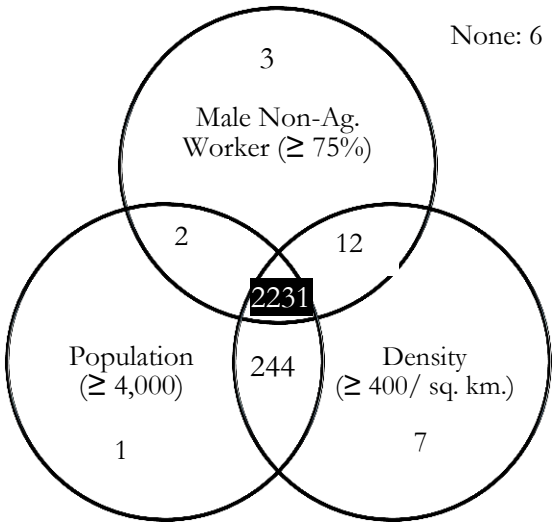


Figure 2b: Characteristics of New CTs (Village population threshold of 4,000)



Note: The analysis is limited to 2506 new CTs and excludes 36 new CTs as information on their area of settlement was unavailable. Another 10 villages in 2001 became 21 CTs in 2011 by partition.
Source: Based on Primary Census Abstract and Village Directory, Census of India 2001

Characteristics of New Census Towns

As CTs are identified prior to census operation, information from the last census is used to examine the process of identification. A priori, all the new CTs should be on the 'threshold' of CT criterion, though such a 'threshold' itself is somewhat subjective. Figures 2a and 2b shows the number of the new CTs that satisfied the three criteria, i.e., population, density and male non-agricultural workforce in 2001. Figure 2a shows that that 1625 settlements that have been declared as new CTs fulfilled all the three conditions in 2001 and indeed were qualified to be CTs at that time itself. Similarly, another 618 new CTs were fulfilled the density and workforce conditions, and 168 new CTs were fulfilled the population and density conditions. Figure 2b relaxes the population 'threshold' to 4,000, under the presumption that such a settlement could easily have a population of 5,000 in 2011. Figure 2b shows that, with this modification, 2231 new CTs fulfilled all three conditions in 2001. An additional 244 settlements among the new CTs fulfilled both population and density conditions in 2001 but not the workforce criterion. However, of these, 166 settlements (68%) had at least 70% of their male workforce engaged in non-farm work in 2001; while another 62 (25.4%) crossed the 60% threshold. This indicates that the settlements designated as CTs in the 2011 census are very likely to satisfy the definition of a CT. If anything, the fact that 1625 of them already met the criterion in 2001 and were not recognised indicates that there may be more such settlements in 2011. The concerns over inflated urbanisation therefore may not be warranted. Indeed, it would appear that in both years, the extent of urbanisation may be underestimated, e.g., including the population of the 1625 settlements in 2011 would add 18.7 million people to the urban population in 2001 raising the urbanisation rate by 1.8% to 29.6%. It is therefore conceivable that such an adjustment after the 2011 census settlement figures are available could increase the urbanisation rate even further.

Contribution of New Census Towns to Urban Growth

So, if India has added roughly twice the number of new CTs in the last decade than in its history, what is their contribution to the total urban growth in this period?

Estimation of Population

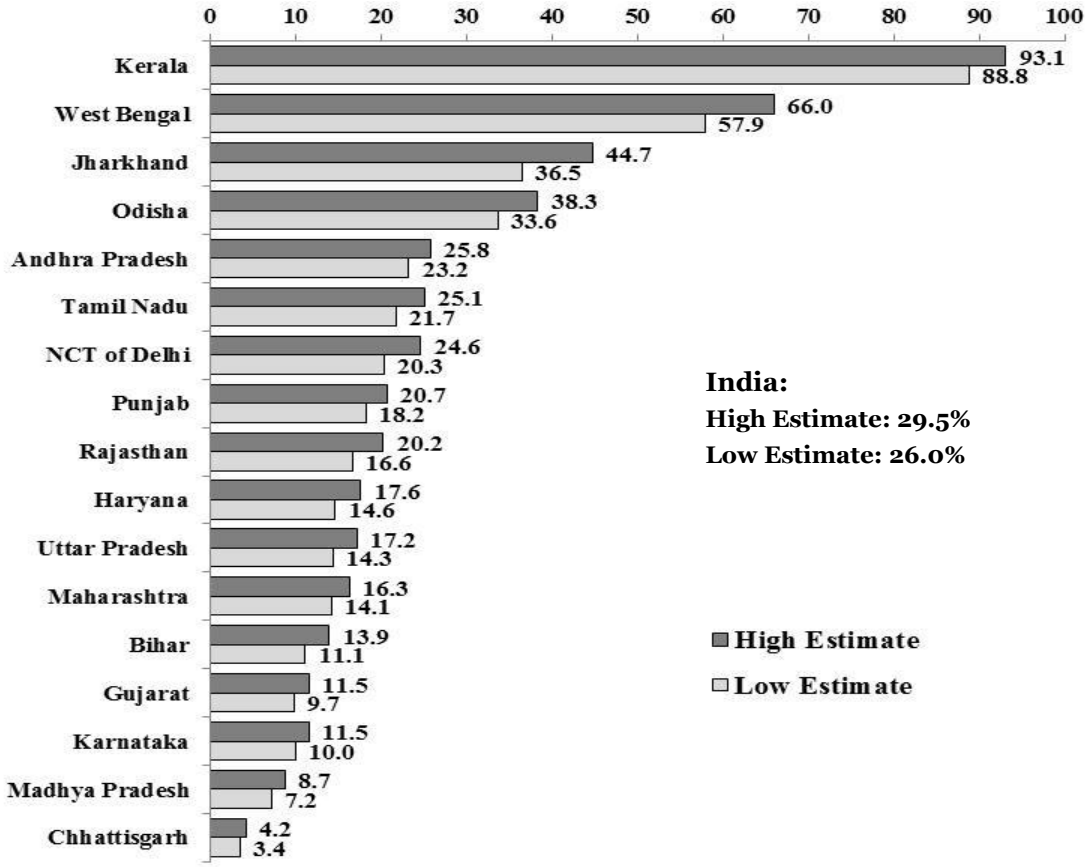
Since the detailed population figure for 2011 is not yet available, the population in 2001 is used to estimate the current population of a new CT. If one assumes zero population growth between 2001 and 2011 (unlikely for a large number of units in a country growing at 17.6% per decade), the 2001 population can be considered as a lower bound, though it is possible that some settlements may experience negative growth, as in some class I cities in Kerala. An alternative estimate is constructed by assuming that these settlements have grown at a rate similar to the total state population (both urban and rural) growth rate.[6] It is interesting that despite the qualification criteria, the population in 2001 was less than 4000 for 18 CTs in 2011.

Table 2, shows that, at an all India level, 29.5 % of the urban growth (26.8 million people) between 2001 and 2011 is due to re-classification of rural areas into CTs. If one assumes zero population growth of these new CTs in this period, this would be 26% (23.7 million people), the lower bound referred to above.[7] This share of growth attributable to re-classification varies widely between states. Among the major states (represented in descending order of this share in Figure 3),

the share is highest for Kerala (93%) followed by West Bengal (66%). Thus, almost the entire jump in the share of urban population in Kerala, from 26% to 48%, and two thirds of the increase in West Bengal, from 28% to 32%, can be attributed to re-classification. It is lowest for Chhattisgarh (4%) and Madhya Pradesh (9%). Similarly among the smaller states/UTs, it is 93% for Lakshadweep, 73% for Goa, 63 % for Daman and Diu and 61% in Tripura, while Sikkim (6%) and Arunachal Pradesh (8%) have the lowest share of increase due to reclassification.

This implies a doubling in the share of CTs, assuming that the old CTs have grown at the same rate as overall urban population. While the share of CTs in the total urban population was 7.4%, the share of CTs in 2011 would be between 13.7% and 14.5% of the urban population. This is a form of in-situ urbanisation (Zhu 2002) that is occurring without substantial migration between settlements and as such is contrary to the usual perception of the processes of urbanisation.

Figure 3: Contribution of New CTs to Urban Population Growth (Major States)



Note: This is limited to states with growth of at least one million in absolute urban population between 2001 and 2011. These 17 states together account for 94% of the total urban growth. "Low Estimate" assumes no growth in 2001 population and "High Estimate" uses the growth rate of total state population to estimate population in 2011.

Estimate of the Contribution of Migration

The estimation of the contribution of CTs to urban growth helps in estimating the contribution of migration to this growth. This is estimated as a residual, after removing the estimated contribution of natural growth, net reclassification of rural settlements into CTs and STs and incorporation of rural settlements into existing STs by expansion of their boundaries. Bhagat (2011) estimates that 44% of the urban growth, between 2001 and 2011, is natural growth and the remaining 56% is due to net reclassification, expansion of boundaries and migration. As shown earlier, 29.5% of the growth is because of reclassification of rural settlements into CTs, implying the remaining 26.5% is attributable to net reclassification of rural settlements into STs, the incorporation of such settlements into existing STs by expansion of their boundaries and migration.[8] The net change in STs happens because of de-classification of STs or merging of one or more STs into other STs (decrease) or reclassification of rural and other urban areas (CTs and OGs) into STs (increase). While merging of STs and reclassification of other urban areas to STs will have no impact on the total urban population, de-classification of STs and reclassification of rural areas into STs will affect the urban population.

Estimating the extent of urban growth due to net change in STs is difficult till detailed information on their 2001 constituent units is released. A preliminary attempt to compare the 2011 STs with 2001 STs suggests that 98.5% of the STs in 2001 (3741 out of 3799) remain as ST in 2011. The remaining STs in 2001 have either been de-notified into rural areas or merged with other STs, with a major share of the population expected to be in the latter category since it is the smaller STs that are de-notified. Out of the 58 STs in 2001 which are not ST in 2011, the 35 STs that were merged with eight large ULBs account for 93% of total population.[9] This implies that conversion of urban area into rural area due to de-notification of ST would be very small. Similarly, there are 55 CTs of 2001 which became STs in 2011. Out of the 243 STs in 2011 which were rural areas in 2001, the 2001 population of 212 units, without accounting for other rural areas which could also have merged in these units, was 2.1 million or 2.3% of the total urban growth in the last decade.[10] A figure of 2.3% of urban growth due to reclassification of rural areas into STs would imply that the remaining 24.2% of the urban growth could be because of migration and expansion of boundaries.

Expansion of boundary, which is to a large extent limited to STs, is a process of urbanization where smaller ULBs and villages come within city limits over time. When expansion includes existing urban areas, it does not change the aggregate urban population, but if the expansion also includes villages, a phenomenon which can be seen for a number of cities in the last decade (e.g. 111 in BBMP in 2007, 23 in Pune Municipal Corporation, 53 in Vasai-Virar Municipal Corporation etc.), it reclassifies such rural areas into urban areas.[11] The magnitude of expansion of boundaries in India varies from time. It was 11.9% in 1971-81, 2.1% in 1981-91 and 9.9% in 1991-2001 (HPEC 2011). Even an assumption of 2% of urban growth due to expansion of boundaries, which is the lowest in last three decades, would imply that at most 22.2% to 25.7% of urban growth in the last decade is due to migration. This is similar to the contribution over 1971-81, 1981-91 and 1991-2001, of 19.9%, 22.6% and 21.1% respectively (HPEC 2011), suggesting that the contribution of migration has not changed significantly.[12]

Location of New Census Towns

After the contribution of new CTs to urban growth and their inter-state variations, another important question is about the location of these new CTs. This is examined in three ways. First, is

the number of new CTs in a district associated with its existing urbanization level and size of settlements? Second, what is the proportion of new CTs that are located around existing cities? Finally, are new CTs constituents of existing built-up agglomerations? For the last inquiry, a novel method of agglomerating built-up areas used by Denis and Marius-Gnanou (2011) is used.

New Census Towns and Existing Urbanisation level

It can be expected that urbanisation of a district would have some positive bearing on the formation of new CTs. As a district becomes more urbanised, its employment pattern concentrates more on non-farm sectors and if this share for a particular village crosses the specified limit, it would meet one condition for becoming a CT. Figure 4a and 4b show the average number of new CTs per district when all 2001 districts are divided into quintiles based on urbanisation rate, limited to districts with at least one new CT (4a) and all 2001 districts (4b). This appears to indicate that the average number of new CTs increase with a move to a higher quintile, indicating some association of new CTs and urbanisation.

Figure 4a Urbanisation and New CTs (Districts with at least one new CT)

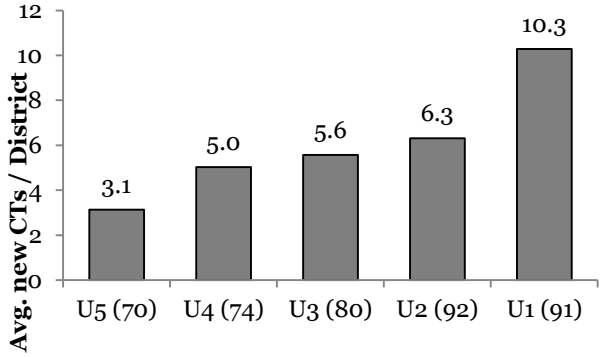
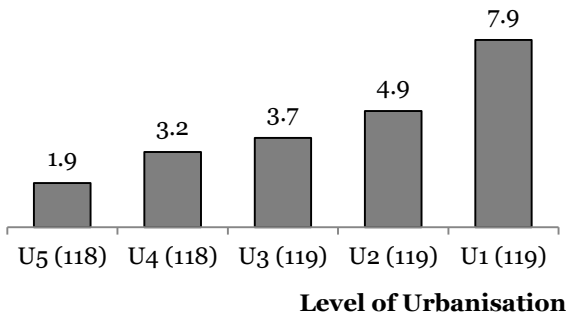


Figure 4b Urbanisation and New CTs (All Districts)



Note: The first quintile (U1) represents highest level of urbanisation and fifth quintile (U5) represents lowest level of urbanisation. U5 (<8.7%), U4 (8.7-15.1%), U3 (15.1-21.8%), U2 (21.8-34.9%).

In order to further verify the above relationship, a simple multivariate regression analysis was conducted with the dependent variable being the number of new CTs in a district. The independent variables are the district urbanisation rate in 2001, the number of large villages (greater than 4,000 population) in a district and state dummies. The analysis is limited to districts which are not fully urbanized (urbanisation rate of less than 100% in 2001) and have at least one large village (with more than 4,000 population). The results of OLS regression and Quantile regression (estimated at 0.25, 0.50 and 0.75 quantiles) are reported in Table 3.[13] The low R^2 shows that these variables explain only a part of the factors that lead to the formation of new CTs, but both these models show the statistical significance of urbanisation rate and the number of large villages. The difference in the value of coefficients between the OLS regression and quantile regression at the median and between quantiles indicates a relationship that varies across the distribution. The increase in the coefficient associated with the urbanization rate at a higher quantiles can be interpreted as a higher effect on the formation of new CTs through the interaction of urban units in a district.[14]

Location of New Census Towns in the Proximity of Large Towns

After finding a positive relationship between existing urbanisation and new CTs, the next question of interest is about the spatial distribution of these new CTs. Do rural areas close to an existing city transform faster in terms of criteria for becoming a CT? Are these new CTs spread more or less evenly across space or are they concentrated near particular areas? In this regard, it is important to note that if one village is important for its surrounding villages for socio-economic reasons (for marketing their products, education, health, banking etc.) it can become a CT over time with the growth of its surrounding areas, without proximity to a city (Rondinelli 1983, Gupta 2010).

Figure 5 shows the number of new CTs in each district. A visual inspection of the map gives the impression that while a large number of new CTs are concentrated around major metropolises, many of them are also geographically dispersed. [15]

However, the share of new CTs to total number of large villages (more than 4,000 populations) has a somewhat different spatial picture from that of the number of new CTs (Figure 6). It shows a more limited effect of proximity to large cities, and the share is also high in some districts in North East states and Odisha. This is possibly due to variations in the size structure of settlements by districts, e.g., the higher number of large villages for districts with more than 10 new CTs (an average of 118) and smaller number of large villages in districts with ratio of new CTs to large villages greater than 50% (an average of 10).

In order to address this phenomenon more precisely, the number of new CTs that come within a certain radial distance (not road distance) of the larger cities is calculated. Some caveats are necessary. First, each city has a unique shape and one radius for one city may not be applicable to another city of the same size. Second, a single radius may not be appropriate for even the same class of cities, for example in a hilly state vis-à-vis a plains state. Taking care of such issues requires detailed city-specific studies, which is outside the scope of this paper. However, in order to partially address these issues, buffers are differentiated by city size and a robustness check is carried out.

All towns with more than one lakh population, i.e., class I towns, in 2011 are grouped into four classes on the basis of population, viz.: 1 to 5 lakh, 5 to 10 lakh, 10 to 40 lakh and more than 40 lakh. A base radius of 10 km for 1 to 5 lakh towns, 15 km for 5 to 10 lakh towns, 20 km for 10 to 40 lakh towns and 25 km for more than 40 lakh towns was considered and then the number of new CTs under this area was estimated. If one CT comes under the radius of multiple cities, it is only counted once. For robustness, the above exercise was repeated by changing the radius of each class of cities by 25% to see how the result changes with the change in the radius.[16]

The result is reported in Table 4. The last (sixth) column shows the total state-wise number of new CTs studied under this exercise and the corresponding 2001 population (figure in parenthesis) of these new CTs. The third to fifth column shows the proportion of new CTs around large towns based on three combinations of distances and the corresponding 2001 population. For all the states together, 37 % of the new CTs are within the buffer of large towns and it accounts for 34% of the total population of new CTs. Thus, about two thirds of the population of the new CTs is outside the buffer area of the class I towns. If the radius is increased by 25%, it goes up to 45% and 41 % for the number of CTs and population respectively. Similarly a 25% reduction in distance would bring it down to 30% and 27% respectively. However there is a wide inter-state variation of the share of new CTs in the proximity of large towns. The share for Kerala, which has the second largest number of new CTs in India, is very low compared to the national average. Similarly, Assam,

Odisha, Madhya Pradesh and Rajasthan are other states in which the share of new CTs in the proximity of large towns is very low. On the other hand, states with a large share of new CTs in the proximity of large towns are Delhi, Haryana and Uttar Pradesh.

Table 5 shows the distribution of new CTs in the proximity of large towns by the size-class of towns. It indicates that, among the new CTs in the vicinity of class I towns, 45% of the number of CTs and 42 % of population are in the proximity of towns with population of one to five lakhs. Similarly, another 15% of the number of CTs and 19% of population are in the proximity of towns with population of five to ten lakhs. This means that even among the new CTs in the vicinity of class I towns, only 39% of their population is in the vicinity of million plus cities, i.e., only 13.1% of the population of the new CTs is in the vicinity of the million plus cities. It confirms the initial observation that while there are a large number of CTs in close proximity to class I towns, many of them are not around the megacities and there are many more that are widely spread across the countryside. This appears to indicate that there may be multiple urbanisation processes at work.[17]

New Census Towns and Built-up Agglomerations

Denis and Marius-Gnanou (2011) have recently constructed a new measure of agglomeration based on proximity of built up area. According to their methodology, if the built-up area of one settlement, irrespective of the classification by the Census of India as rural or urban, is within 200 metres of the built-up area of another settlement, both settlements are part of the same settlement agglomeration (SA). Using a threshold population of 10,000 for SA, they have estimated that the share of people who live in such SAs in India as 37.5% in 2001, versus the official urbanisation figure of 27.8%. Using their database for SAs with a population 5,000 or more, Table 6 examines whether the new CTs form part of such SAs. It shows that a large number of new CTs in 2011 (83% of all CTs and 97% of CTs with a population above 5,000) were already part of a SA in 2001. Many of these CTs 42% (884) are in SAs with a population of 50,000 and less, indicating that they are not around large population centres. It also shows that many of these new CTs are not stand-alone settlements but part of a cluster of settlements which are relatively proximate to each other, even if they are relatively distant from class I towns.

Governance Implications

The CTs near and away from metropolitan areas have distinct sets of challenges for urban governance. Though population growth within the administrative limits of large metropolitan cities in the last decade has shown a downward trend, their peripheries have shown higher growth and some of this could well be due to the growth in CTs as well. The interaction between the core city and the peripheries is crucial for the growth and development of both types of entities. It is an open question as to whether the growth of such units happened because of the lack of land use planning and building restrictions; but it is difficult to dispute that these units are vital for the growth of the main cities and require proper governance arrangements. Expansion of municipal boundary is one of such process by which these units become part of the formal governance arrangement. At times such expansion may be resisted by such settlements.[18]

Depending upon the combinations of radii chosen, the number of new CTs in the proximity of large towns may vary, but it is clear from the above that a large share of the new CTs is not around the large towns. These CTs could have different characteristics than the CTs near large towns and the nature of interaction of these units with their surroundings areas (mainly villages) and

within them may be very different from the latter. However, ignoring them from a governance point of view, as currently the case, is not a solution. As Mr. Jairam Ramesh, the Union minister of rural development, remarking on the growth of such CTs, said recently: "Our policies have been either for rural or urban areas. We lack an approach to such *trishanku* (middle world) areas."[19] In this context, the centrally sponsored scheme for Provision of Urban Amenities in Rural Areas (PURA) is being restructured and is eventually intended to cover non-municipal block headquarters and rural areas with potential growth centres and 3,000 CTs.[20] However, PURA focuses only on certain services; it is also important to think about proper governance systems in these areas.

Given current practice, where few CTs get statutory recognition, it is likely their governance arrangements would continue to be rural for some time to come. At times, this is a part of a deliberate strategy of the state government to access central government funds. On 11 June 2004, the Government of Tamil Nadu directed the "reclassification of 566 town panchayats as village panchayats". The government determined that since "most of the town panchayats are financially weak, and rural in character …town panchayats having a population of less than 30,000 may be reclassified as village panchayats so as to enable them to receive more funds from the Government of India and State Government under various grants and assistance." (emphasis added).[21]

Conclusion

The urban population growth of 91 million between 2001 and 2011 is for the first time higher than the absolute rural growth. Using a novel Census dataset this paper finds that the 2553 new CTs, which were rural areas in 2001, accounted for 26% to 29.5% of the urban growth in the last decade. From this it can be inferred that the extent of the urban migration in the last decade is similar to the migration rate of the last three decades, despite the growth in the rural urban differential. This indicates an in-situ form of urbanisation rather than urbanisation through migration. While it finds that pre-existing urbanization and the number of large villages in a district are important determinants of the number of new CTs in a district, it is estimated that only 37.2% of these new CTs are in the proximity of class I towns. There is also large inter-state variation in these parameters. West Bengal has the maximum number of new CTs followed by Kerala, Tamil Nadu, and Uttar Pradesh. While 93% of total urban growth in Kerala is due to new CTs it is only 4% for Chhattisgarh. Similarly, proximity of new CTs near large towns is higher in Delhi, Haryana and Uttar Pradesh and lower in Assam, Odisha, and Madhya Pradesh.

Since it is estimated that about a third of the population in these new CTs are in the proximity of large towns, it could be argued that they may come under the city jurisdiction through the process of future boundary expansion and would be governed by the formal urban system. However, there are a large number of the new CTs which are far away from major urban centres and part of smaller SA and are governed under the rural administrative framework. Since these units are different from other rural areas by their economic characteristics and have the potential for future growth, proper governance arrangements would be crucial.

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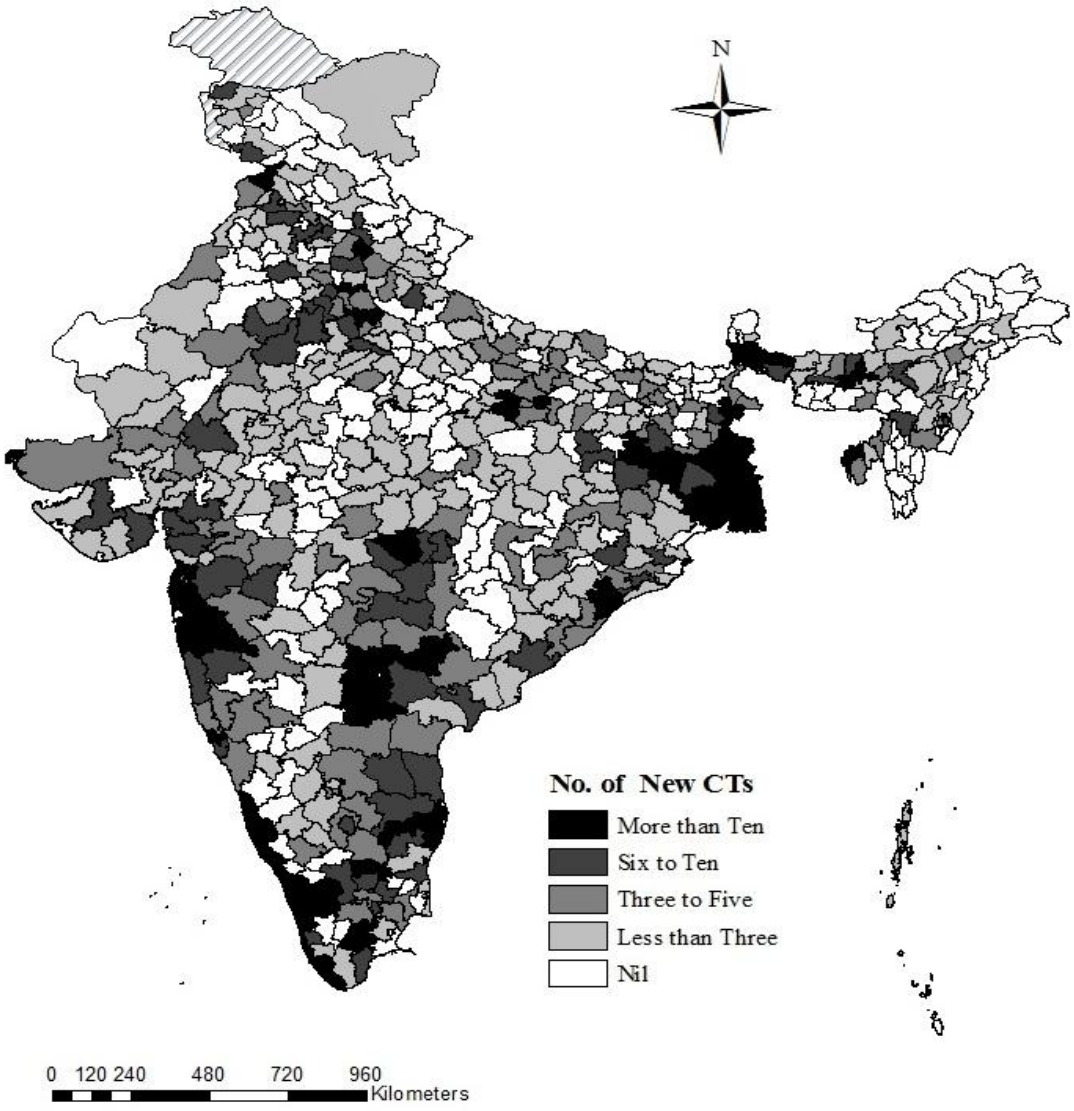
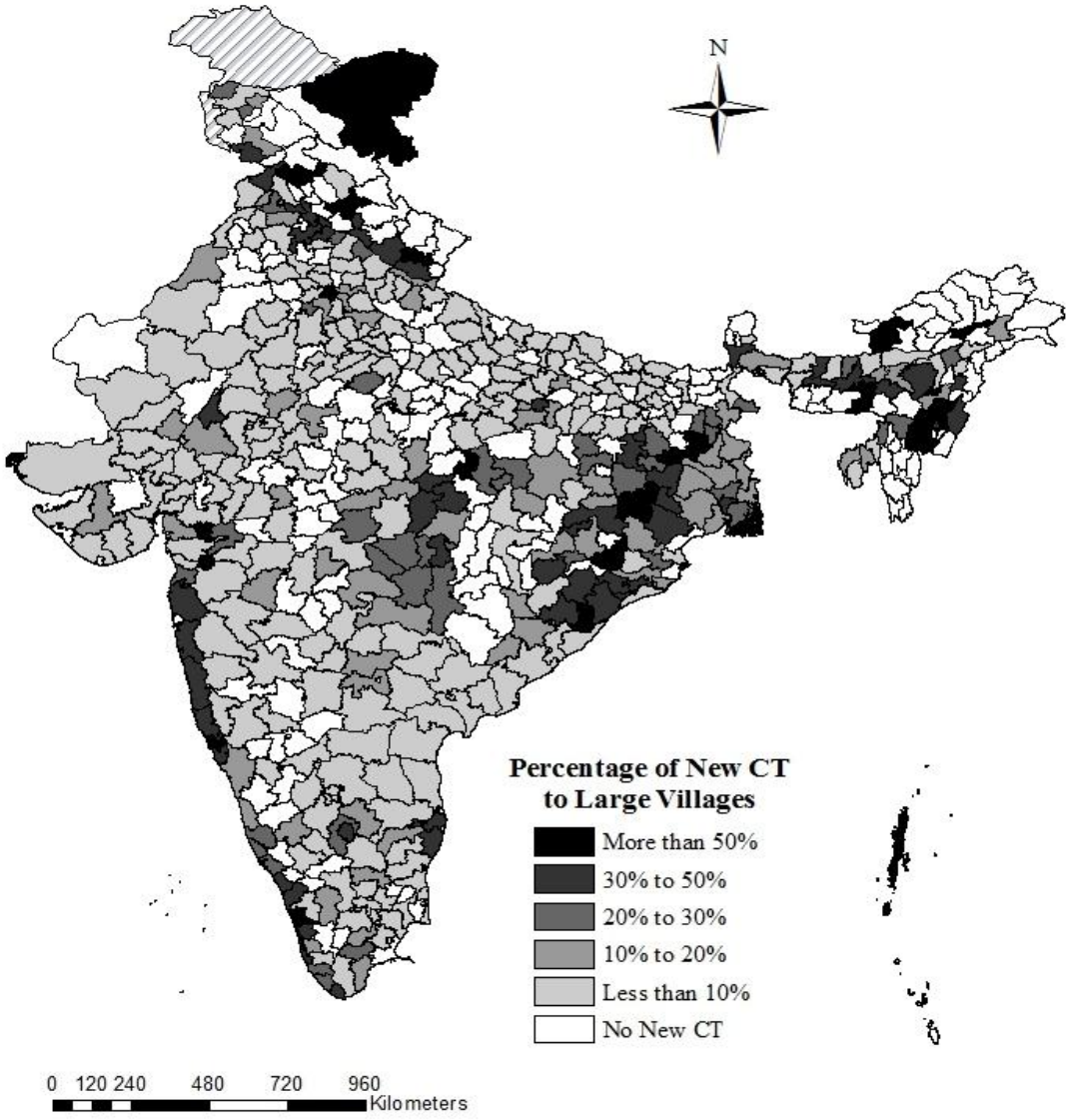
Figure 5: District wise Distribution of New CTs in India



Note: For NCT of Delhi, the whole state is shown as one unit and the average number of new CTs per district is shown.

Figure 6: Share of New CTs to Total Large Villages



Note: For NCT of Delhi, the whole state is shown as one unit and the average of all districts is taken. Large villages are those with population more than 4,000 in 2001.

Table 1. Dynamics of Census Town Between 2001 and 2011

Sl. No.	STATE	Total CT in 2001	Change in 2001 CT			New CT in 2011			Total CT in 2011
			De-notified to Village	Upgraded /Merged with ST	Not Known	Other Urban Area to CT	From Village. to CT	Not Known	
	All India	**1362**	**55**	**144**	**11**	**141**	**2553**	**48**	**3894**
1.	Andhra Pradesh	93	6	18		22	137		228
2.	Arunachal Pradesh	17		17			1		1
3.	Assam	45	2	3		6	80		126
4.	Bihar	5		1		4	52		60
5.	Chhattisgarh	22	2	13	3	0	10		14
6.	Goa	30				1	25		56
7.	Gujarat	74	1	24		21	83		153
8.	Haryana	22		4	2	8	49	1	74
9.	Himachal Pradesh	1		1			3		3
10.	Jammu and Kashmir	3				6	27		36
11.	Jharkhand	108	4	23			107		188
12.	Karnataka	44		11		13	81		127
13.	Kerala	99				16	346		461
14.	Madhya Pradesh	55	3	4		18	46		112
15.	Maharashtra	127	11	8			171		279
16.	Manipur	5					18		23
17.	Meghalaya	6					6		12
18.	Nagaland	1		1			6	1	7
19.	Odisha	31	1				86		116
20.	Punjab	18	3	1		5	55		74
21.	Rajasthan	38	3	2	1	4	76		112
22.	Sikkim	1		1			1		1
23.	Tamil Nadu*	111	6				227	44	376
24.	Tripura	10	1	6			23		26
25.	Uttarakhand	12	1			2	29		42
26.	Uttar Pradesh	66	4		3	2	204	2	267
27.	West Bengal	252	4	4	1	11	526		780
28.	Andaman and Nicobar	2					2		4
29.	Chandigarh	0					5		5
30.	NCT of Delhi	59	3		1		55		110
31.	Dadra & Nagar Haveli	2		2			5		5
32.	Daman and Diu	0					6		6
33.	Lakshadweep	3					3		6
34.	Puducherry	0				2	2		4

Source: Based on author's calculation

*Including two Townships; Mizoram has no CT in 2011

Table 2. Share of New CTs to Total Urban Population Growth Between 2001-11

Sl. No.	STATE	New CTs re-classified from Villages			Absolute change in Urban Pop. 2001-11 (mn)	Share of New CTs (Low)	Share of New CTs (High)
		Number	Pop. 2001 (mn.)	Pop. 2011 (Est.) (mn.)			
	All India	**2553**	**23.68**	**26.82**	**90.99**	**26.0**	**29.5**
1.	Kerala	346	6.80	7.13	7.67	88.8	93.1
2.	Lakshadweep	3	0.02	0.02	0.02	87.3	92.8
3.	Goa	25	0.16	0.17	0.24	67.7	73.3
4.	West Bengal	526	3.89	4.43	6.71	57.9	66.0
5.	Daman and Diu	6	0.05	0.08	0.13	40.9	62.8
6.	Tripura	23	0.22	0.25	0.42	52.7	60.5
7.	Andaman and Nicobar	2	0.01	0.01	0.02	55.2	58.8
8.	Manipur	18	0.12	0.14	0.25	48.4	57.5
9.	Assam	80	0.46	0.54	0.95	48.5	56.7
10.	Dadra and Nagar Haveli	5	0.03	0.05	0.11	30.3	47.0
11.	Jharkhand	107	0.71	0.86	1.94	36.5	44.7
12.	Odisha	86	0.50	0.57	1.48	33.6	38.3
13.	Meghalaya	6	0.04	0.05	0.14	25.2	32.2
14.	Andhra Pradesh	137	1.75	1.95	7.54	23.2	25.8
15.	Tamil Nadu	227	1.62	1.87	7.47	21.7	25.1
16.	NCT of Delhi	55	0.70	0.84	3.43	20.3	24.6
17.	Uttarakhand	29	0.19	0.22	0.91	20.5	24.4
18.	Jammu &Kashmir	27	0.17	0.21	0.90	19.0	23.6
19.	Himachal Pradesh	3	0.02	0.02	0.09	19.5	22.0
20.	Punjab	55	0.39	0.44	2.12	18.2	20.7
21.	Rajasthan	76	0.64	0.78	3.87	16.6	20.2
22.	Nagaland	6	0.05	0.05	0.23	19.7	19.6
23.	Haryana	49	0.40	0.48	2.71	14.6	17.6
24.	Uttar Pradesh	204	1.42	1.70	9.93	14.3	17.2
25.	Maharashtra	171	1.37	1.59	9.73	14.1	16.3
26.	Chandigarh	5	0.03	0.03	0.22	13.5	15.8
27.	Bihar	52	0.34	0.42	3.05	11.1	13.9
28.	Puducherry	2	0.02	0.03	0.20	10.9	13.9
29.	Gujarat	83	0.66	0.78	6.78	9.7	11.5
30.	Karnataka	81	0.56	0.65	5.62	10.0	11.5
31.	Madhya Pradesh	46	0.30	0.36	4.09	7.2	8.7
32.	Arunachal Pradesh	1	0.01	0.01	0.09	6.3	8.0
33.	Sikkim	1	0.01	0.01	0.09	5.7	6.4
34.	Chhattisgarh	10	0.06	0.07	1.75	3.4	4.2

Source: Based on author's calculation

E: Estimated population using the growth rate of total state population

Table 3. Existing Urbanisation and New CTs

	OLS (with state dummies)	Quantile Regression (with state dummies)		
		Q(0.25)	Q(0.50)	Q(0.75)
Urbanisation Rate (2001)	0.136***	0.030***	0.069***	0.104***
	(0.026)	(0.005)	(0.006)	(0.018)
No. of Villages with population more than 4000	0.065***	0.012***	0.018***	0.036***
	(0.019)	(0.002)	(0.002)	(0.006)
Constant	-3.329**	1.630***	-0.124	-1.787*
	(1.136)	(0.219)	(0.266)	(0.795)
Adj. R^2/ Pseudo R^2	0.510	0.128	0.251	0.389
N	549	549	549	549

* p<0.05, ** p<0.01, *** p<0.001

The figure in the parentheses represents the standard error (heteroskedasticity-robust for OLS) of the estimators. The R^2 for OLS is adjusted R^2 and for Quantile regression is Pseudo R^2. The analysis is limited to districts with less than 100% urbanised and has at least one village with more than 4000 population. Lakshadweep is considered as reference dummy variable.

Table 4. New CTs and Proximity to Large Towns

Sl. No.	State	Case-I (Base) (% of total CTs in state)	Case-II (+25%) (% of total CTs in state)	Case-III (-25%) (% of total CTs in state)	CTs Under Analysis [No. (Pop. in million)]
1.	Andhra Pradesh	30.4 (24.3)	34.1 (25.8)	28.1 (21.4)	135 (1.72)
2.	Arunachal Pradesh	0 (0)	0 (0)	0 (0)	1 (0.01)
3.	Assam	18.8 (18.4)	23.2 (23.2)	14.5 (14.3)	69 (0.39)
4.	Bihar	36.5 (34.0)	42.3 (46.4)	32.7 (29.8)	52 (0.34)
5.	Chhattisgarh	30.0 (33.1)	30.0 (33.1)	20.0 (25.1)	10 (0.06)
6.	Goa	0 (0)	0 (0)	0 (0)	25 (0.16)
7.	Gujarat	37.3 (33.9)	44.6 (43.2)	34.9 (30.4)	83 (0.64)
8.	Haryana	67.3 (66.7)	69.4 (68.3)	57.1 (54.7)	49 (0.40)
9.	Himachal Pradesh	0 (0)	0 (0)	0 (0)	3 (0.02)
10.	Jammu and Kashmir	46.2 (49.8)	50.0 (54.1)	26.9 (29.2)	26 (0.17)
11.	Jharkhand	32.7 (30.7)	40.2 (36.9)	27.1 (26.4)	107 (0.71)
12.	Karnataka	37.5 (35.7)	47.5 (43.5)	21.3 (18.2)	80 (0.56)
13.	Kerala	14.1 (14.2)	22.4 (22.9)	7.9 (8.7)	340 (6.69)
14.	Madhya Pradesh	24.4 (24.3)	31.1 (32.2)	13.3 (15.7)	45 (0.29)
15.	Maharashtra	45.5 (42.5)	48.5 (45.5)	41.9 (38.5)	167 (1.35)
16.	Manipur	0 (0)	0 (0)	0 (0)	15 (0.10)
17.	Meghalaya	0 (0)	0 (0)	0 (0)	0 (0)
18.	Nagaland	50.0 (47.3)	50.0 (47.3)	50.0 (47.3)	6 (0.05)
19.	Odisha	8.2 (9.7)	12.9 (13.1)	4.7 (5.4)	85 (0.49)
20.	Punjab	43.6 (50.5)	56.4 (62.6)	36.4 (45.0)	55 (0.39)
21.	Rajasthan	18.4 (13.9)	21.1 (15.5)	14.5 (11.2)	76 (0.64)
22.	Sikkim	0 (0)	0 (0)	0 (0)	1 (0.01)
23.	Tamil Nadu	44.9 (45.4)	53.7 (54.7)	38.0 (38.6)	216 (1.57)
24.	Tripura	28.6 (36.0)	38.1 (47.8)	19.0 (24.1)	21 (0.20)
25.	Uttarakhand	62.1 (60.9)	72.4 (69.8)	58.6 (58.2)	29 (0.19)
26.	Uttar Pradesh	63.2 (66.2)	68.6 (70.0)	53.9 (58.1)	204 (1.42)
27.	West Bengal	43.1 (45.0)	55.8 (57.2)	29.9 (32.5)	511 (3.76)
28.	Andaman and Nicobar	50.0 (61.0)	50.0 (61.0)	50.0 (61.0)	2 (0.01)
29.	Chandigarh	100 (100)	100 (100)	100 (100)	5 (0.03)
30.	NCT of Delhi	89.1 (95.0)	96.4 (98.4)	80.0 (90.8)	55 (0.70)
31.	Dadra and Nagar Haveli	0 (0)	0 (0)	0 (0)	5 (0.03)
32.	Daman and Diu	0 (0)	0 (0)	0 (0)	6 (0.05)
33.	Lakshadweep	0 (0)	0 (0)	0 (0)	3 (0.02)
34.	Puducherry	50.0 (51.1)	100 (100)	50.0 (51.1)	2 (0.02)
	All India	**37.2 (33.6)**	**44.8 (41.0)**	**29.5 (26.8)**	**2489 (23.16)**

Note: Case-I (Base) :1 to 5 Lakh towns- 10 km radius, 5 to 10 Lakh towns- 15 km radius, 10 to 40 Lakh towns- 20 km radius, >40 Lakh towns- 25 km radius; **Case-II (25% more) :**1 to 5 Lakh towns- 12.5 km radius, 5 to 10 Lakh towns- 18.75 km radius, 10 to 40 Lakh towns- 25 km radius, >40 Lakh towns- 31.25 km radius; **Case-III (25% less):** 1 to 5 Lakh towns- 7.5 km, 5 to 10 Lakh towns- 11.25 km, 10 to 40 Lakh towns- 15 km, >40 Lakh towns- 18.75 km.

The first number in a cell shows the total number (or share) of new CTs and the figure in the parentheses shows the total (or share) of 2001 population. This analysis is based on 2489 out of 2553 new CTs for which it was possible to find the geo-reference. The 64 new CT, not included in the analysis, are distributed over the following states: 2 in Andhra Pradesh, 11 in Assam, 1 in Jammu and Kashmir, 1 in Karnataka, 6 in Kerala, 1 in Madhya Pradesh, 3 in Manipur, 6 in Meghalaya, 4 in Maharashtra, 1 in Odisha, 11 in Tamil Nadu, 2 in Tripura and 15 in West Bengal.

Table 5. Proximity of new CTs by Size Class of Towns

Size Class of Towns	Case-I (Base) No (Popn.)	Case-II (+25%) No (Popn.)	Case-III (-25%) No (Popn.)
100,000 to 500,000	45.1% (42.3%)	41.9% (41.1%)	51.7% (49.4%)
500,000 to 1,000,000	14.8% (18.6%)	14.9% (18.3%)	14.7% (17.5%)
1,000,000 to 4,000,000	18.4% (15.6%)	17.1% (14.3%)	19.5% (16.5%)
More than 4,000,000	21.7% (23.4%)	26.1% (26.3%)	14.1% (16.7%)
Total in the Proximity of Large Towns	**926 (7.8 mn.)**	**1115 (9.5 mn.)**	**735 (6.2 mn.)**
Not in the Proximity of Large Towns	**1563 (15.4 mn.)**	**1374 (13.7 mn.)**	**1754 (16.9 mn.)**

Note: If a CT comes under multiple classes of city proximity, then it is considered under the proximity of larger city class.

Table 6. New CTs by Size of Settlement Agglomerations (SA)

Size of SA (2001) / Size of new CT(2001)	Less than 10,000	10,000 to 30,000	30,000 to 50,000	50,000 to 100,000	100,000 to 200,000	200,000 to 500,000	Greater than 500,000	Total in SA	Not in SA
Less than 5,000	12	52	22	34	52	41	128	341	376
5,000 to 10,000	413	138	36	86	99	67	280	1119	35
10,000 to 20,000		158	23	30	23	28	189	451	11
20,000 to 50,000		19	11	8	3	6	162	209	4
More than 50,000				1		1	5	7	
Total	**425 (20.0%)**	**367 (17.3%)**	**92 (4.3%)**	**159 (7.5%)**	**177 (8.3%)**	**143 (6.7%)**	**764 (36%)**	**2127 (100%)**	**426**

Endnotes

[1] Apart from OGs, there are instances where a part of the village is considered as a unit to declare it as a CT. For example, Gunduuppalavadi was a village in 2001 in Cuddalore district of Tamil Nadu. In the census of 2011 part of the settlement remains as village and other part has become a CT.

[2] Available at http://egovstandards.gov.in/Mapping_location_codes

[3] There are some instances of wrong matching, for example, Barki Saraiya, a CT in 2011 in Giridih district of Jharkhand, has been matched with Sahibganj municipality of 2001. However the urban directory shows that Sahibganj has been reclassified from municipality to Nagar Parishad and it is situated in a different district (Sahibganj district). Since there was only one settlement by the name of Barki Saraiya in the whole state and in one district in 2001 and in 2011 with a population of more than fifteen thousand population, matching of Barki Saraiya CT from 2011 with Barki Saraiya village in 2001 seems more appropriate. This is only one of possible type of error in the database presented here, but there are be other issues like missing codes, where personal judgments are needed.

[4] The 35 census towns are distributed in the following states, viz.: Andhra Pradesh (3), Jammu and Kashmir (3), Gujarat (15), Haryana (2), NCT of Delhi (1), Maharashtra (1), Punjab (1), Rajasthan (1), Sikkim (1), Tamil Nadu (3), Uttar Pradesh (1) and West Bengal (3).

[5] Sadaura, in Yamunanagar district of Haryana is one such example. It was a municipal committee (MC) in the census of 2001 with 2398 households. It was reportedly converted to a village panchayat in 2001 and back to an MC in 2006. In 2007, due to protests from residents, it was reverted back to a village panchayat. Since it possesses all the urban characteristics, it was classified as CT in 2011, with 3075 households. See "Sadhaura to have panchayat, not MC: Poll Cancelled", *The Tribune*, 28 February 2007 (accessed at http://www.tribuneindia.com/2007/20070301/haryana.htm#9 on 25 July 2012).

[6] The data for Tamil Nadu, a state with a large number of new CTs is especially problematic. First, the 2001 code is missing for a large number of CTs. Second, there are instances where villages have been divided into multiple parts and a portion of them have been identified as urban and the other as rural, making it difficult to allocate the population in 2001 between rural and urban areas. Because of such problems, 44 out of 376 CT could not be matched. For 10 other CTs, when the settlement in 2001 is divided into multiple CTs, the 2001 population is equally distributed among the new CTs.

[7] It is important to note that since a large number of CTs in Tamil Nadu could not be matched and some of them are classified from villages to CT; the actual figure could even go up marginally.

[8] Though 55 CTs in 2001 were de-notified to villages, relatively smaller size of these settlements would imply that its impact would be insignificant.

[9] Out of the 35, one ST each has been merged with Visakhapatnam, Junagarh and Jamnagar, two with Vasai-Virar, four with Dhanbad, six with Bengaluru, nine with Hyderabad and eleven with Ahmedabad.

[10] Since the 2001 population for 32 STs could not be estimated, the actual figure at 2011 population could be higher than this.

[11] "Vasai-Virar civic body not a good idea, say villagers", *The Indian Express*,21 July 2009 (accessed at www.indianexpress.com/news/vasaivirar-civic-body-not-a-good-idea-say-villagers/491940/ on 25 July 2012); "Draft Development Plan For The Newly Merged 23 Villages", Pune Municipal Corporation (accessed at www.punecorporation.org/pmcwebn/dp23vill.aspx on 25 July 2012); "BBMP jurisdiction is vast but resources are limited", *The Hindu*, 17 March 2012 (accessed at www.hindu.com/2010/03/17/stories/2010031763290400.htm on 25 July 2012)

[12] Chandrasekhar (2011), on the basis of NSS data for 2009-10, estimates that 8.05 million rural non-agricultural workers commute to urban areas for their work. This is 9.1% of the total urban non-agricultural workforce. Though these people are an active part of the urban economy, the present system does not recognise them under urban areas.

[13] The difference between the OLS and quantile regression is that while the OLS estimates the conditional mean functions by minimising sum of squared residuals from the mean, median regressions estimates the conditional median by minimising the absolute residuals from the median. The other quantile regressions are estimated by minimising asymmetrically weighted absolute residuals from the relevant quantile. This is useful for understanding the impact of independent variables at different points of the conditional distribution of the dependent variable.

[14] While there is a direct impact of a large urban area on its surrounding villages, it could also have indirect impact on the far away villages through its interaction with other large urban area(s) in the district. For example even if a village is not close to two urban areas but it lies near a road which connects these two, then also it is possible for the village to benefit from their mutual actions. This effect could increase with higher urbanisation and densification of urban centres in the district.

[15] Few examples of such districts where the number of new CTs is more than 10 are North-West, South, South-West and Ghaziabad in NCR; Hugli, Haora, Nadia, North 24 Parganas and South 24 Parganas in Kolkata Metropolitan Region; Mahbubnagar, Medak and Rangareddy in Hyderabad Metropolitan Region; Raigarh and Thane in Mumbai Metropolitan Region; Kancheepuram and Thiruvallur in Chennai Metropolitan Region; Coimbatore district, Nagpur District, Pune district etc.

[16]The radius combination which is 25% more than the base radius is 12.5 km for 1 to 5 lakh towns, 18.75 km for 5 to 10 lakh towns, 25 km for 10 to 40 lakh towns and 31.25 km for more than 40 lakh towns. Similarly, the radius combination which is 25% less than the base radius is 7.5 km for 1 to 5 lakh towns, 11.25 km for 5 to 10 lakh towns, 15 km for 10 to 40 lakh towns and 18.75 km for more than 40 lakh towns.

[17] Denis, Mukhopadhyay and Zérah (2012) also seem to suggest that multiple urbanisation processes may be at work in India, such as metropolitan agglomeration and what they term subaltern urbanisation.

[18] Vasai-Virar civic body not a good idea, say villagers", The Indian Express,21 July 2009 (accessed at www.indianexpress.com/news/vasaivirar-civic-body-not-a-good-idea-say-villagers/491940/ on 25 July 2012)

[19] "New scheme to uplift semi-urban settlements", *Hindustan Times*, 7 June 2012. Accessed at http://www.hindustantimes.com/India-news/NewDelhi/New-scheme-to-uplift-semi-urban-settlements/Article1-867589.aspx on 25 July 2012

[20] Final Report of Working Group on "Scheme for Provision of Urban Amenities in Rural Areas (PURA)", Ministry of Rural Development (accessed at http://planningcommission.nic.in/aboutus/committee/wrkgrp12/rd/wgrep_pura.pdf on 25 July 2012)

[21] Government of Tamil Nadu, GO No. 270 dated 11 June 2004. Prior to this, "according to section 3-B of the Tamil Nadu District Municipalities Act,1920, any local area having a population of not less than 5,000 and an annual income of not less than 1 lakh of rupees shall be constituted as a town panchayat." Accessed at http://www.tn.gov.in/gorders/maws/maws-e-270-2004.htm on 25 July 2012. This was subsequently overturned by Government of Tamil Nadu, GO No. 55 dated 14 July 2006 (accessed at http://www.tn.gov.in/gorders/maws/maws_e_55_2006.htm on 25 July 2012)

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