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Geographical Appraisal on Spatial Pattern of the Declassification Trends among Census Towns in West Bengal

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Abstract: The last three decades witnessed a colossal surge in the transformation of villages into Census Towns (CTs), as an outcome of the ongoing rapid urbanization in West Bengal. Interestingly, it can be noticed that along with the emergence of the new CTs, a substantial number are losing or are on the verge of losing their "urban" status by census of India. A few studies have been done in the past to understand the spatial nature and reasons for such an unusual phenomenon. However, this paper focuses on understanding and bringing out the spatiality and trend of declassified towns in relation to their reasons for declassification. The primary data sources for the study are the various primary census abstracts and district census handbooks of the different districts. Different spatial analysis methodologies like Nearest Neighbor Analysis, Kernel Density Analysis, Standard Deviation Ellipses, and the Moran's I index (both Global and local) for spatial autocorrelation have been employed to understand the spatiality and distribution of these CTs throughout the state. Upon analysis, it has been noticed from the LISA cluster map that the individual clusters identified for these declassified towns, are near the border area of the districts or surrounding states or international borders. In the different census years, different spatial patterns have been noticed, varying from dispersed to cluster in nature. An estimation of Census Towns that are likely to get declassified in the 2021 Census has also been attempted and its probable spatial nature has been determined accordingly. Field survey was undertaken in selected declassified CTs, to understand people's perception and their level of awareness about the changing status of their town and the changes in their socio-economic condition over time.

Keywords*: *Census Towns (CTs), Spatial Distribution, Non-Agricultural Pursuits, Spatial Autocorrelation, LISA

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I. INTRODUCTION

At present, as the world is urbanizing at a rapid pace, the most striking visible feature is that it is not evenly spread around the world, and is most concentrated in the economically and technologically advanced countries as compared to its counterparts. However, it is expected that most of the urbanization and urban growth will take place the developing countries in the coming decades (World Urbanization Prospects, The 2011 Revision Highlights). In India, urbanization received an impetus after independence, due the country's adoption of a mixed form of economy that resulted in the cropping up of the private sector. The urban scenario of India has always been characterized by 'urban primacy' which means the concentration of urban population primarily in the cities (having a population of 100,000 and above (Kundu, 2011)), along with the considerable fall in population in small towns (Bhagat & Mohanty, 2008), (Chakraborty et al., 2015).

Since independence, as the process of urbanization is happening in leaps and bounds, it is seen that regionally, about half of the urban population of India resides in the six of the most urbanized states, namely, Tamil Nadu, Maharashtra, Gujarat, West Bengal, Karnataka, and Punjab (Sivaaramakrishnan, Kundu, & Singh, 2011). As West Bengal is considered among the top six most urbanized states, it is interesting to see that the concentration of the urban population has mostly been in the highly urbanized districts surrounding the metropolitan city of Kolkata ((Giri, 1998); (Konar, 2009)). Until the late 1980s, the pattern of urbanization in West Bengal has been spatially unbalanced and mono-centric in nature (Dasgupta, 1987). Thereafter, the state saw a new trend of decentralized urbanization, through the emergence, growth, and development of small urban centres, called Census Towns (CTs), in adequate quantity away from Kolkata and its Urban Agglomeration (UA) (Guin & Das, 2016).

Since the 1990s, India, especially West Bengal witnessed a humongous escalation in the emergence of

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Census Towns. From just 48 Census Towns in 1971 to 780 in 2011 (as depicted in Table 1), these CTs are being viewed as the new routes of urban dynamics and has been termed as "unacknowledged urbanization" by (Pradhan, 2013) and as "denied urbanization" by (Denis et al., 2012) or "rural urbanization" by ((Wang & Hu, 2007); (Zhu et al., 2009)).

Table 1 Changing Number of Census Towns in West Bengal, 1971-2011

Census Year	1971	1981	1991	2001	2011
No. of CTs	48	89	148	252	780

Source: (Samanta, 2021)

Literature abounds on the analysis of the spatial and temporal patterns and trends in the emergence of the new Census Towns and urban growth/ urbanization in India; more so in West Bengal. It is seen that while many villages that attain an urban character, upon validation, get promoted to be recognized as a town or rather a Census Town (CT); have a decade lag between its actual attainment of urban characters and being recognized (Chakraborty et al., 2017).

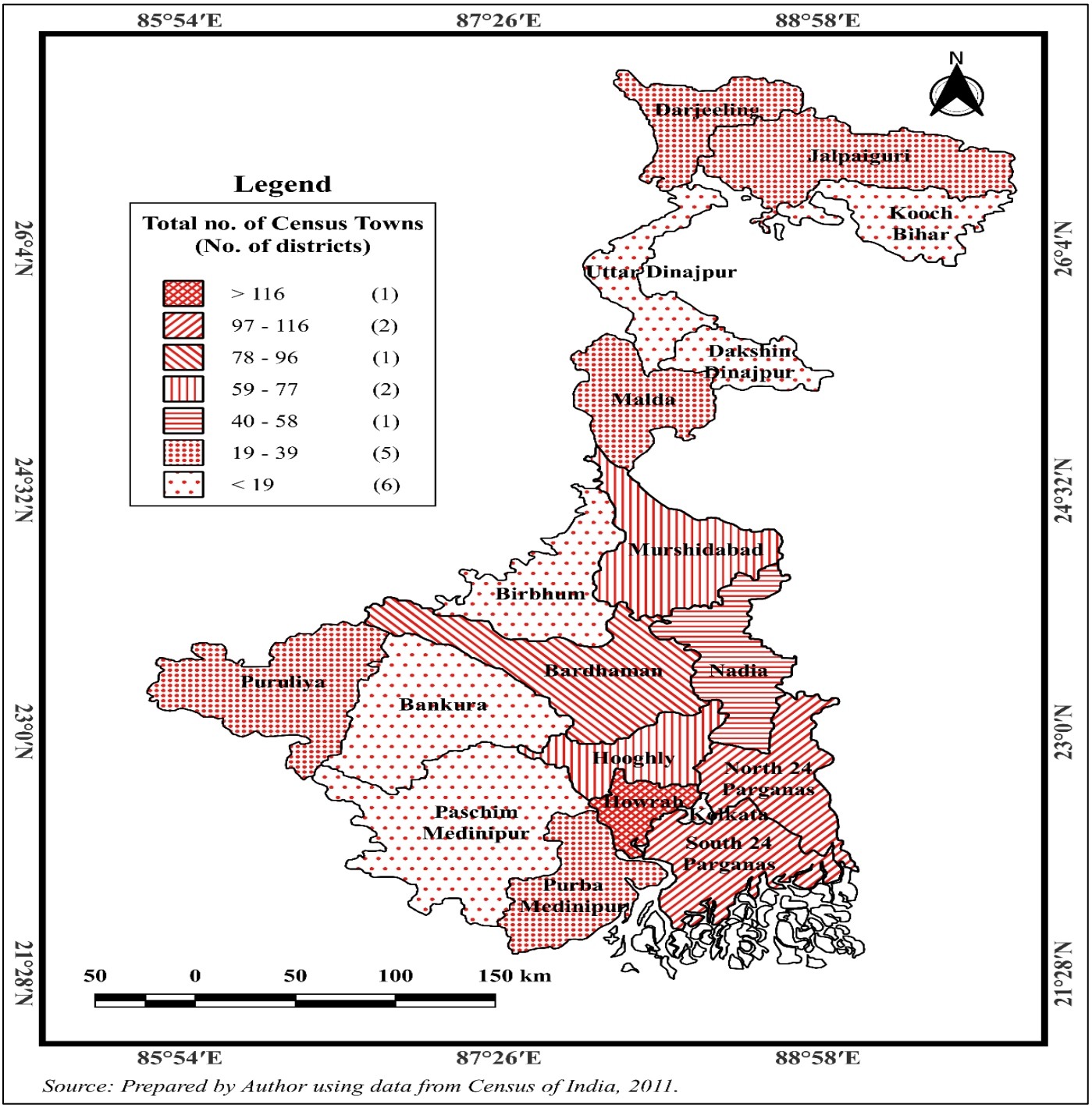

Fig 1 District-wise total number of Census Towns in West Bengal, 2011

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The colossal surge in the emergence of Census Towns in West Bengal since 1990s, has brought significant changes in the furtherance of urban development and growth of urban population across the state, which previously was more agglomerated to/around the class I towns and already urbanized districts ((Giri, 1998); (Konar, 2009)) leading to a shift in the urbanization trend in the state.

This study however, makes use of a retrospective approach that focuses on the declassification trend of these Census Towns; their spatiality and aims to find the root causes for the demotion of such towns that led them to lose their "urban" status, upon failing to meet the eligibility criteria in the next Census. The last three census decades i.e., from 1991 to 2011 has been chosen as the time frame for the study due to the delay in the publication of the supposed latest census of 2021.

II. CONCEPTUAL AND THEORETICAL PERSPECTIVES

➢ *Definition and Identification of Census Town*

Conceptually, Census Towns (CTs) are identified as per the guidelines set by the Registrar General of India (RGI) in their circular (No. 2/1/2008 – ss) released on 23 July 2008. However, the RGI is quite equivocal in respect to identifying the CTs and states the methodology for the same (Guin & Das, 2015). To identify the CTs for a particular census, the RGI makes use of a "retrospective approach" and actually uses data from the last census for this procedure. For example, the 2001 census record was used as reference for the 2011 census (Pradhan & Roy, 2018).

A place qualifies to be classified as "urban" (here, to mean Census Towns), if it crosses the thresholds of all the three specific urban criterion, viz,

- A population of 4000 and above
- A population density of 400 persons per sq. km
- At least 75% of the male main workers engaged in non-agricultural pursuits. (Pradhan, 2013)

It should be noted that "the population used is 4000 and not 5000, since RGI presumes the reduced population cut-off of 4000 should increase to 5000 during the intercensal period" (Pradhan & Roy, 2018). The RGI in its circular (No. 2/1/2008 – ss), clearly mentioned that in order "to calculate the percentage of non-agricultural workforce, the proportion of workers engaged in forestry, fishing, plantation, and related activities should not be included." (Guin & Das, 2015). Once the criterion was attained and validated, it resulted into their promotion as a CT in 2011. Thus, a 10-year lag is noticed between the actual attainment of the eligibility criterion and its actual recognition (Chakraborty et al., 2017).

Census Towns are settlements that, despite crossing the thresholds for urban character attainment, are not entitled with an urban local body and therefore, remain under local administration (here, to mean Gram Panchayat), except for Delhi state, where rural governance is non-existent (GoI, 2015) (Jain & Korzhenevych, 2020).

➢ *Approach to Identify Census Towns in India*

The identification of Census Towns largely relies on a "retrospective" study approach. The identification of new Census Towns require a careful analysis and inspection of the previous census records, such that the villages which pass the eligibilty criteria get promoted to an "urban" status. The potent villages, even though have already attained the urban character lag by a decade to get their deserved recognition. Here the outcome has already occurred back in time but gets delayed recognition. This can also lead to the inadequate representation of the current state of these towns, as the economic and social transformations occuring between census periods or the new emerging urban centres that are developing quickly due to factors such as industrial growth or infrastructural development, are often neglected or unrecognized. Therefore, the problem of "underclassification" and "overclassification" is very much prevelent.

➢ *Idea of Declassification of Census Towns in India*

If one side of reality shows the brighter end, the humongous escalation in the emergence of newly formed Census Towns, the other end shows the darker side; the demotion of many existing Census Towns again to their rural form. Just like the identification process of CTs, the same "retrospective approach" is used to review the existing CTs using the same RGI guidelines mentioned in their circular (No. 2/1/2008 – ss) released on 23 July 2008. The fulfilment of the base thresholds is an absolute necessity for the CTs to ensure their endurance as a CT in the upcoming census as well (Chakraborty et al., 2017). So, for a CT that was declared as a CT based on 2001 census data, must be reviewed again based on the same criteria to retain its status of a CT in 2021 census as well. It can so happen that a place that fulfilled the criteria to become or get upgraded to a CT in 2011 based on the 2001 data, happens to fail to maintain the criteria in 2011, will get declassified to a village or non-CT in 2021, suffering a demotion. In general, of the three-eligibility criterion, the "share of non-agricultural male main workforce is the most important one as attainment or detainment in this regard is very difficult" (Chakraborty et al., 2017) and is a common process that CTs have always gone through in every census. In India, 55 CTs were declassified into villages in 2001 (Pradhan, 2013).

The overall main cause for declassification of Census Towns, primarily in West Bengal is mainly due to the growth of farm employment outpacing that of non-farm employment, by taking ta single case study of Patuli, Bardhaman, which was a Census Town in 2001 but was again declassified to a village in 2011. However, very little is known about the root causes on a regional level, as to why there was a decline in the non-farm employment; which led to the growth of farm employment. In light of this, the present paper aims to delve into the root causes for such a decline in non-farm employment in the declassified CTs and also attemps to understand the spatial pattern and trend of declassification of CTs in West Bengal.

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III. MATERIALS AND METHODS

➢ *Study Area*

West Bengal, the easternmost state of India, between the Himalayas and the Bay of Bengal, has been selected as the Study Area and all the districts of the state have been considered for the study. Along with the humongous escalation in the emergence of CTs, a large number of CTs have been seen to get declassified, especially in the last three decades; hence West Bengal has been chosen as the study area. As of 2011 Census, West Bengal has a total population of 9, 13, 47,736 and an area of 88752 sq. km. It has a long colonial history and housed one of the first metropolises in the entire country.

The population density of the districts of West Bengal varies temporally as well as spatially. An overview of the spatial concentration of population since 1991, as depicted in Figure 4, shows even though the population density keeps varying with time, it is mostly the south eastern districts or more specifically, the districts around Kolkata that have the maximum population concentration.

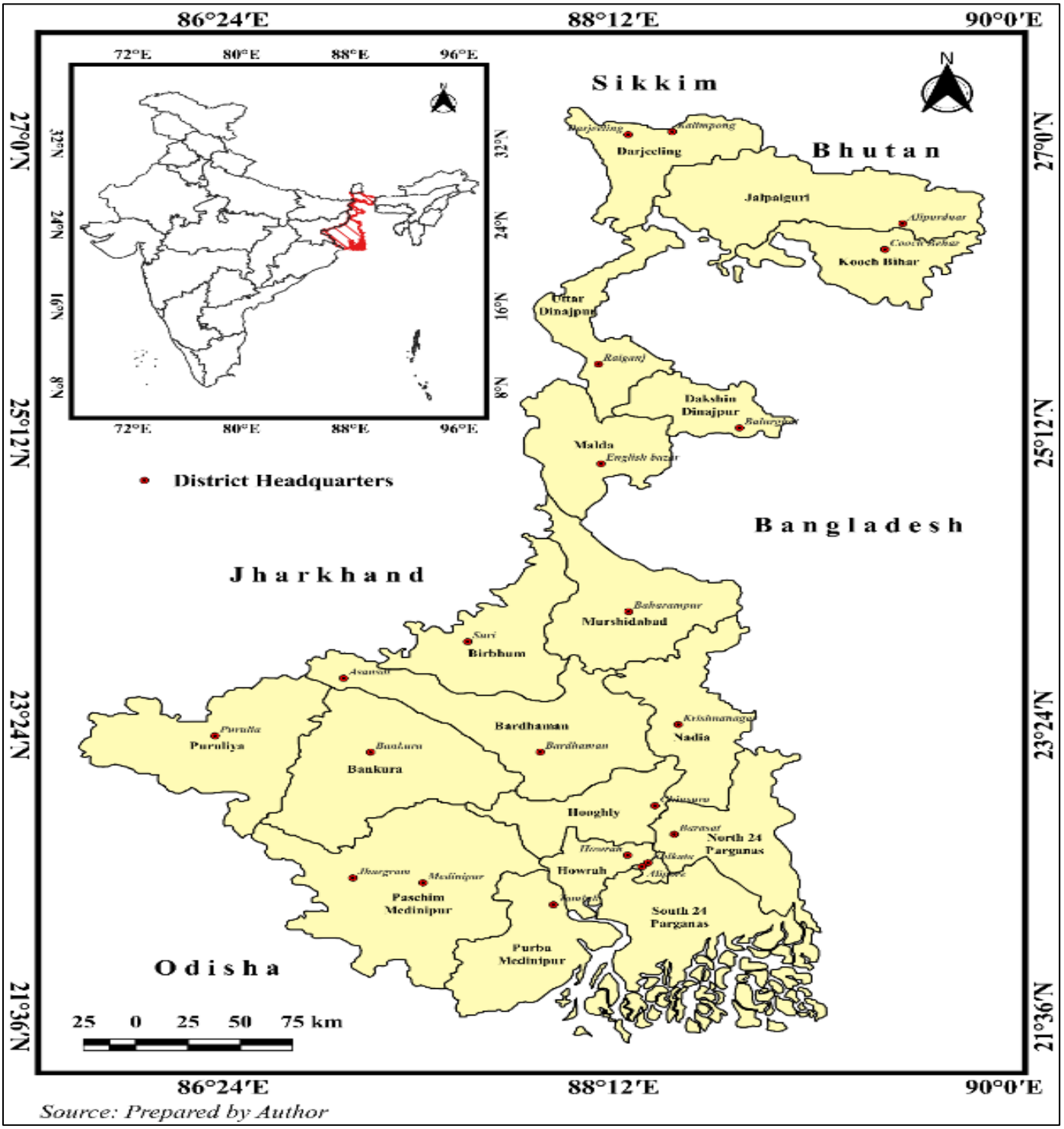

Fig 2 Location of West Bengal and its Administrative Divisions (Districts and their headquarters).

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Though the spatial concentration of population is seen to be in Kolkata and its immediate surrounding districts, upon calculation, the theoretical mean centre of population should supposedly be in the district of Barddhaman, as indicated from Figure 3. Since 1991 to 2011, the calculated mean centre happens to be in Barddhaman district, with just a slight northward shift for each passing census year.

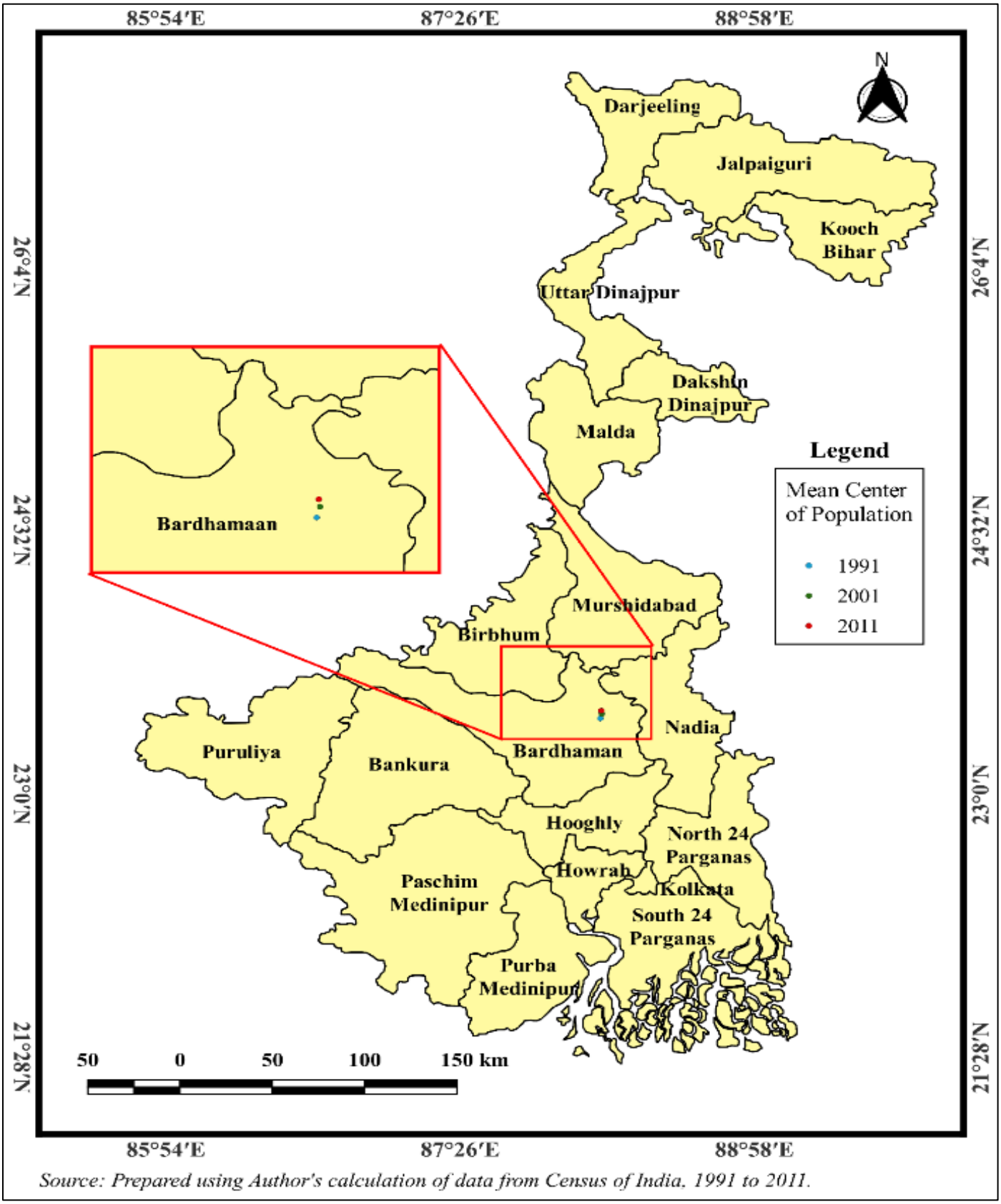

Fig 3 Mean Centers of Population of West Bengal in the different Census years, from 1991 to 2011, depicting the gradual northward shift in the mean center.

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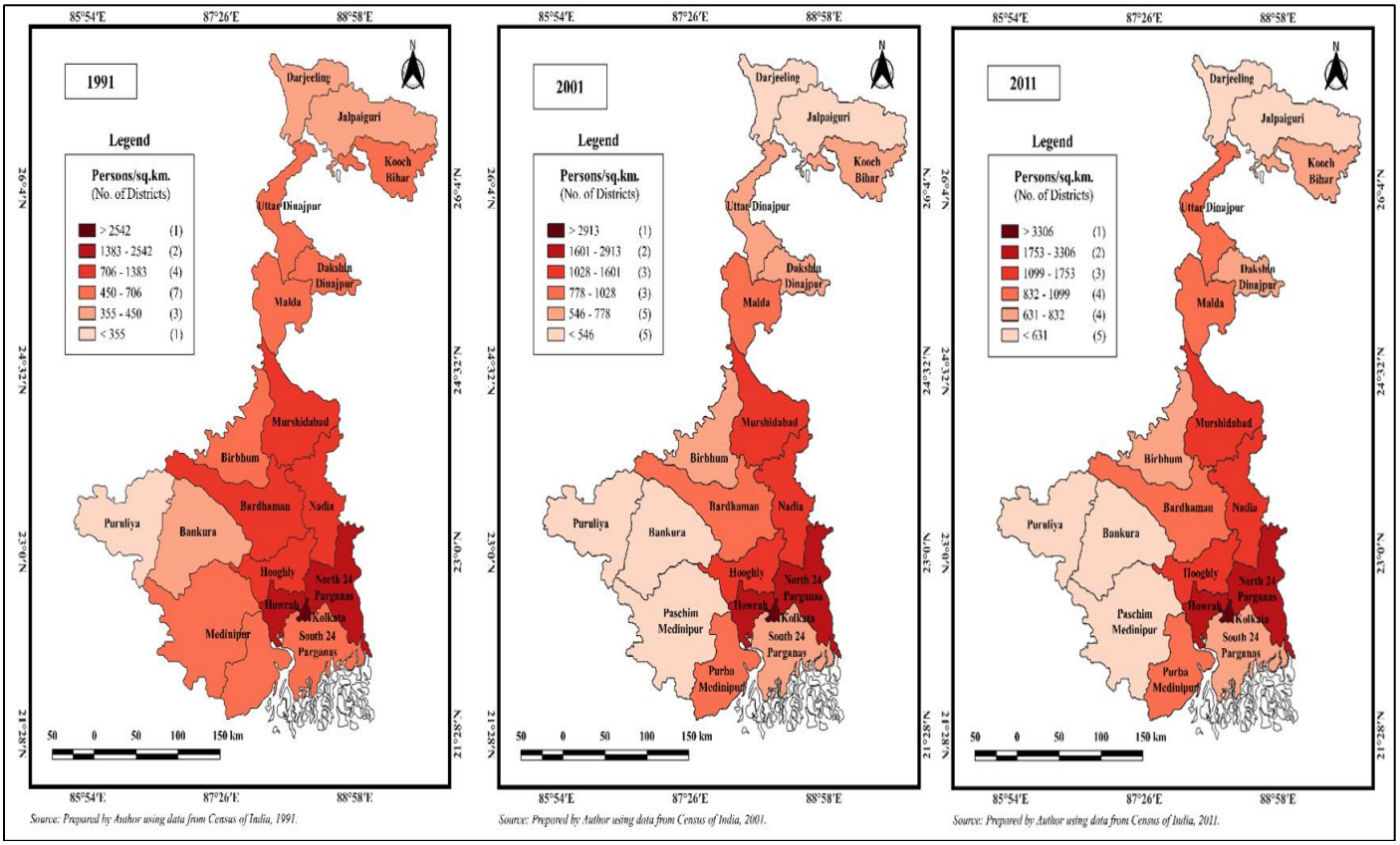

Fig 4 Spatial concentration of population in the districts of West Bengal (1991-2011)

➢ *Objectives and Data Considerations*

Table 2 Objectives of the Study and the Variables, its Sources and Methodologies used and the Major Findings

Objective	Variables Used	Data Source	Methodology employed	Findings
To analyze the spatial nature and dimensions of the declassified CTs and understand their trend across space of the study area.	Total Population Population density Male main-worker population	District Census Handbook of different years PCA data	NNA Z-score P-value SD Ellipse Kernel Density LISA Global Moran's I index	Spatial nature (Dispersed in 1991 and 2011 and clustered in 2001) Mostly situated in N-S direction Located at the bordering regions
To identify and understand the root causes (both in general as well as regionally) for the demotion of these CTs into rural areas.	Temporal variation in livelihood. Urban amenities present. Problems present Awareness level of the people.	Field visit to Dhandadihi, Amta, Patuli, Jagannathpur, Patrasair, Nalhati, Canning **(Sample size: 148)**	Questionnaire	Reasons behind declassification of the CTs. Awareness of the residents about the status of the town.
To make a prediction of the CTs that are likely to get declassified in the 2021 census, which is due to be published yet.	Total Population Population density Male main-worker population	District Census Handbooks	SD Ellipse Kernel Density	81 CTs are likely to get declassified in 2021 in WB. These CTs are mostly located around Kolkata or around bordering regions of districts, states, or international borders.

➢ *Research Methods*

The data obtained for the Declassified Census Towns from secondary sources, have been processed for analysis, using the ArcGIS application. To understand the spatial nature of the same, the following techniques have been used. The research methods and ideas have been presented in Figure.

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➢ *Nearest Neighbour Index*

The Nearest Neighbour Index is a measure of the type of spatial distribution of point features, by analyzing the feature's proximity of the nearest neighbor's distance in the geographical space (Illian et al., 2007). The calculation of the distance of the closest point feature will produce an index whose value ranges from 0 to 2.15. The formula is as follows:

$$R_n = \frac{\bar{r}_i}{\bar{r}_e} = \frac{\bar{r}_i}{\frac{1}{2}\sqrt{N/A}} \quad (1)$$

(Tang et al., 2024)

Where, R_n is the Nearest Neighbour Index;

$\bar{r}_i$ is the actual nearest neighbor distance;

$\bar{r}_e$ is the theoretical nearest neighbor distance;

A is the land area;

N= Number of points.

When R_n=1, it means that the nature of distribution is Random; when R_n>1, it is said to Dispersed; and when R_n<1, it means that the nature of distribution is Clustered/Agglomerated.

➢ *Kernel Density Analysis*

Kernel Density Analysis is basically a quantitative method for estimating the density of point features. It assumes that geographic events can occur at any location in space, but the probability of its occurrence at different locations differs. The probability of an event occurring is high in areas with high point density and low in areas with sparse point density. (Tang et al., 2024).

The concept of Kernel Density is that the highest value is at the point location and that the value decreases with the increase in distance from the points. (A'idah et al., 2021). The calculation formula is as follows:

$$\tilde{\lambda}_h(s) = \sum_{i=1}^{n} \frac{3}{\pi h^4}\left(1 - \frac{(s-s_i)^2}{h^2}\lambda\right)^2 \quad (2)$$

(Tang et al., 2024)

Where, h is the location of i^{th} point within the radius space; s is the specific location of the research point; s_i is the research base that falls in the circle centred on s.

Kernel Density has been processed using ArcGIS 10.8.2 with the Kernel Density tool, located in the Spatial Analyst Tool > Density toolset.

➢ *Standard Deviation Ellipse*

In spatial analysis, the concept of standard deviation ellipse was first proposed by Lefever in 1926 (Wang et al., 2021). It is used to analyze the spatial distribution direction and effectively measures the offset of the distribution centers of multiple elements to know about the overall trend of the target (clustering or dispersion) (Yan & Mengqin, 2021).

$$SDE_X = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{X})^2}{n}} \quad (3)$$

$$SDE_y = \sqrt{\frac{\sum_{i=1}^{n}(y_i - \bar{Y})^2}{n}} \quad (4)$$

$$\tan\theta = \frac{\sum_{i=1}^{n}\tilde{x}_i^2 - \sum_{i=1}^{n}\tilde{y}_i^2 + \sqrt{\left(\sum_{i=1}^{n}\tilde{x}_i^2 - \sum_{i=1}^{n}\tilde{y}_i^2\right)^2 + 4\left(\sum_{i=1}^{n}\tilde{x}_i\tilde{y}_i\right)^2}}{2\sum_{i=1}^{n}\tilde{x}_i\tilde{y}_i} \quad (5)$$

Source: (Tang et al., 2024)

Where, Eq. SDE_X, SDE_y are the main auxilary axes of the elliptical distribution of research bases respectively; $\bar{x}$ and $\bar{y}$ are the arithmetic mean centre coordinates, $\tilde{x}_i$ and $\tilde{y}_i$ is the distance from each point to the arthmetic mean centre; x_i and y_i are the coordinates of the spatial position of each research base; θ is the angle of rotation of the ellipse; n is the number of points. (Tang et al., 2024)

➢ *Spatial Autocorrelation Analysis*

Spatial Autocorrelation is a concept that aids the process of pattern analysis by measuring the relationship between values of a variable, based on their spatial arrangements and determines whether the data is clustered, random, or dispersed, based on the similarity of the values and their spatial proximity (Bandyopadhyay et al., 2012). Clusters form in a geographic distribution when features are found close to one another or when groups of features with similarly high or low values are discovered together (Aghajani et al., 2017). Typically, the indicators to calculate spatial autocorrelation, are of the following two types:

- *Global Spatial Autocorrelation Analysis*

In 1948, P. A. P. Moran developed the Moran's I, which is a significant indication of spatial autocorrelation (Wang et al., 2019). It is a measure of global spatial autocorrelation, which indicates whether similar values of a particular variable are closer together in space, detecting the presence of similar value clustering (Bandyopadhyay et al., 2012).

Moran's I measure spatial autocorrelation based on both feature location and feature values simultaneously (Er et al., 2010) and its value ranges from -1 to +1. The Moran's I is positive when the observed values of locations within a certain distance or their contiguous locations are similar (Ma et al., 2008). It is negative when they are dissimilar, and it is close to zero when the observed values are distributed randomly and independently across space (Musakwa & Niekerk, 2014).

However, global autocorrelation tests are unable to distinguish between high and low clustering within the data set (Wang et al., 2019). Since global Moran's I refer to the

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dataset as a whole, implying homogeneity, it fails to identify individual clustering, necessitating the use of local measures, which can identify spatial autocorrelation at the local level as well as identifying high and low clustering and spatial outliers (Sairi et al., 2021).

- *Local Spatial Autocorrelation Analysis*

Local Moran's I, in contrast to global Moran's I, assumes homogeneity of the entire dataset, and is a local indicator of spatial association and shows the level of spatial autocorrelation at various individual locations within the data set (Musakwa & Niekerk, 2014). Local Moran statistics, also known as Local Indicator of Spatial Association (LISA), are more commonly used to quantify local spatial concentration or clustering (Ayadi & Amara, 2009).

According to Zhang et al. (2008), local Moran's I do not range between -1 and +1. However, a positive value still implies positive spatial autocorrelation (clusters), and a negative value indicates negative spatial autocorrelation (outliers). The LISA cluster map basically categorizes the locations based on the type of association either high values with high values (HH), low values with low values (LL), high, values with low values (HL), or low values with high values (LH) (Anselin et al., 2006). The local Moran's I is used to identify the location of clusters to obtain deeper and more thorough results.

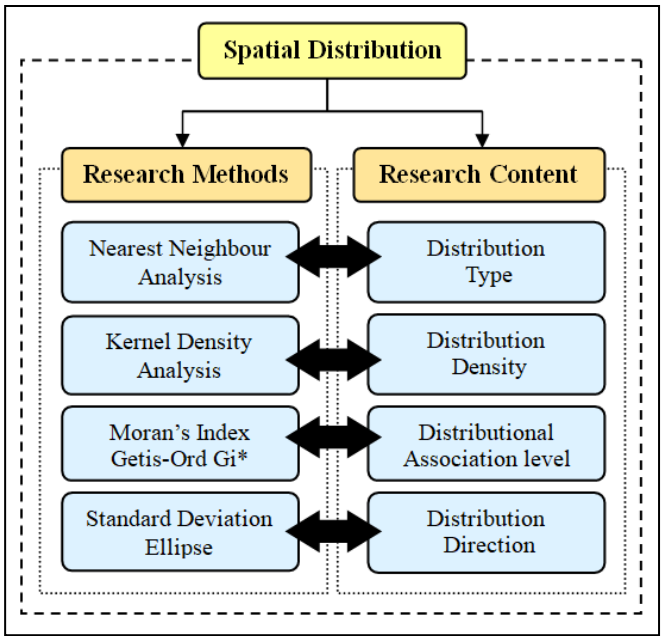

Fig 5 Research Method Framework

IV. RESULTS AND DISCUSSIONS

➢ *The Declassification Trend of the Census Towns*

While on one end of the spectrum is the emergence of new CTs, the other end is the harsh reality of CTs, getting declassified as well. The main account for the failure of these CTs to retain their urban status is an outcome of not being able to meet the eligibility criterion, in the following census. Between 1991 and 2011, West Bengal lost 47 Census Towns in total (Fig. 5). The district-wise absolute figures are shown in Table 3.

➢ *Spatial Distribution Analysis*

In order to analyze the spatial distribution type, the Nearest Neighbour Index has been computed, which helps identify the distribution as clustered, random or dispersed. Upon computation of the Nearest Neighbor Index (NNI) and the z-score values for the declassified CTs, it is that clear that in 1991 and 2011, the CTs that were declassified were dispersed in nature since just a very few CTs got declassified (3 in 1991 and 4 in 2011, respectively) and the z-score values are greater than 2.56. However, 2001 saw many CTs getting declassified and therefore, a clustered distribution were noticed and the z-score value was less than -2.56. The results for the same are shown in Figure 6.

Year	NNI	Z-Score
1991	2.033164	16.01486
2001	**0.790553**	**-2.534165**
2011	1.735777	5.493483

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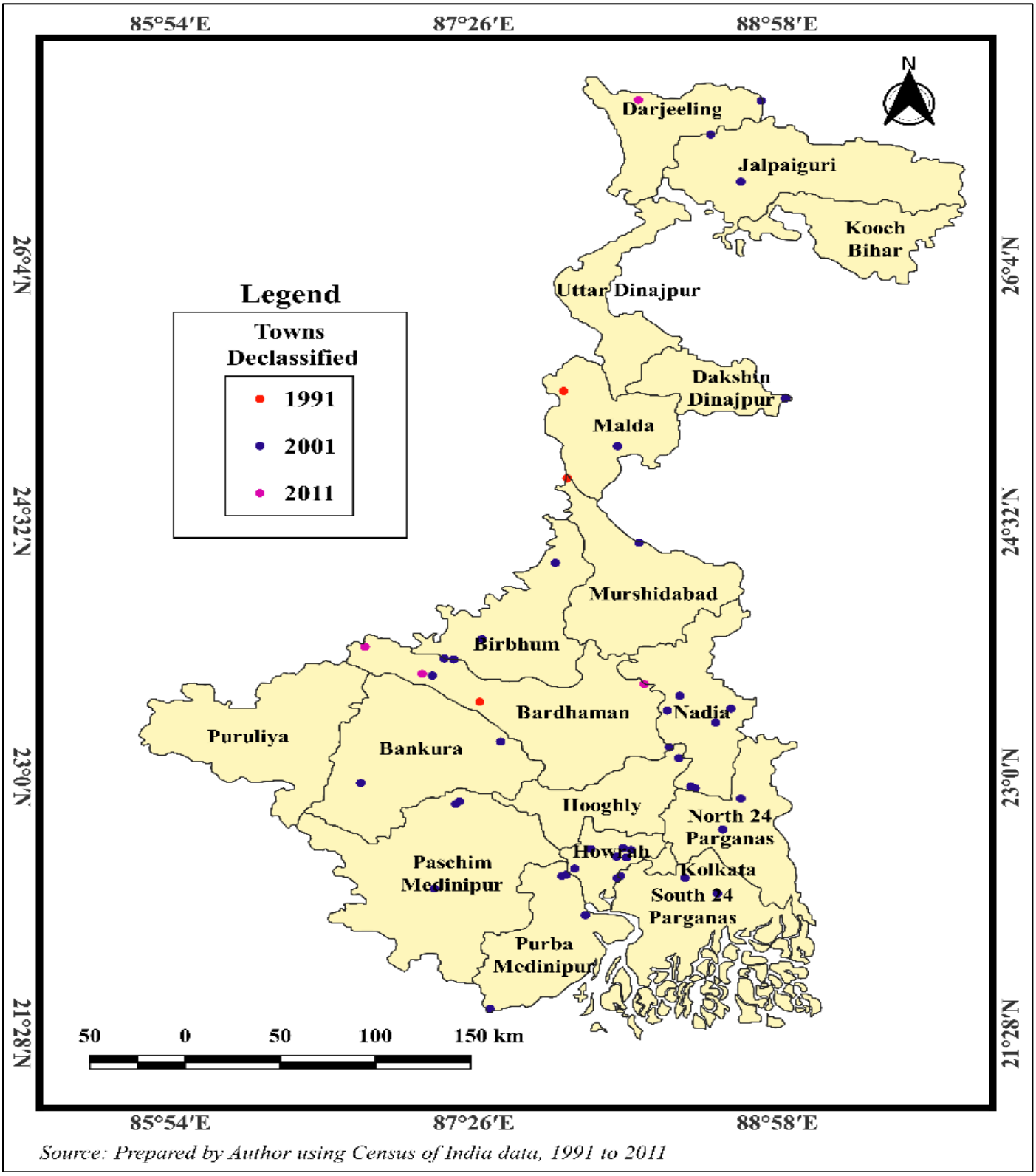

Fig 6 CTs that have been declassified in the different census years, due to their failure to meet the criteria to be called as "urban"

➢ *Spatial Distribution Analysis*

The spatial distribution analysis can be easily done using the Kernel density. Since the results of NNA confirm that only in 2001, a clustered nature is observed, the Kernel Density Analysis for only 2001 has been prepared, shown in Figure 7. It is noticed that one important or major cluster has been the Howrah-Hooghly region. The reason for this cluster form in Howrah has been discussed in a later section of this paper itself.

Other comparatively smaller or minor clusters are seen in and around the borders of districts of Barddhaman and Birbhum, Bankura-Medinipur region and in Nadia and the two Parganas. The reasons for all the same, has been discussed later.

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Table 3 District-wise number of Declassified Census Towns between 1991 and 2011

District	No. of Declassified CTs
Dakshin Dinajpur	1
Bankura	2
Birbhum	2
Darjiling	2
Hugli	2
Jalpaiguri	2
Maldah	2
Murshidabad	2
North 24 Parganas	2
South 24 Parganas	4
Haora	6
Nadia	6
Barddhaman	7
Medinipur	7
Total:	**47**

Source: Based on computation from PCA data, 1991 to 2011

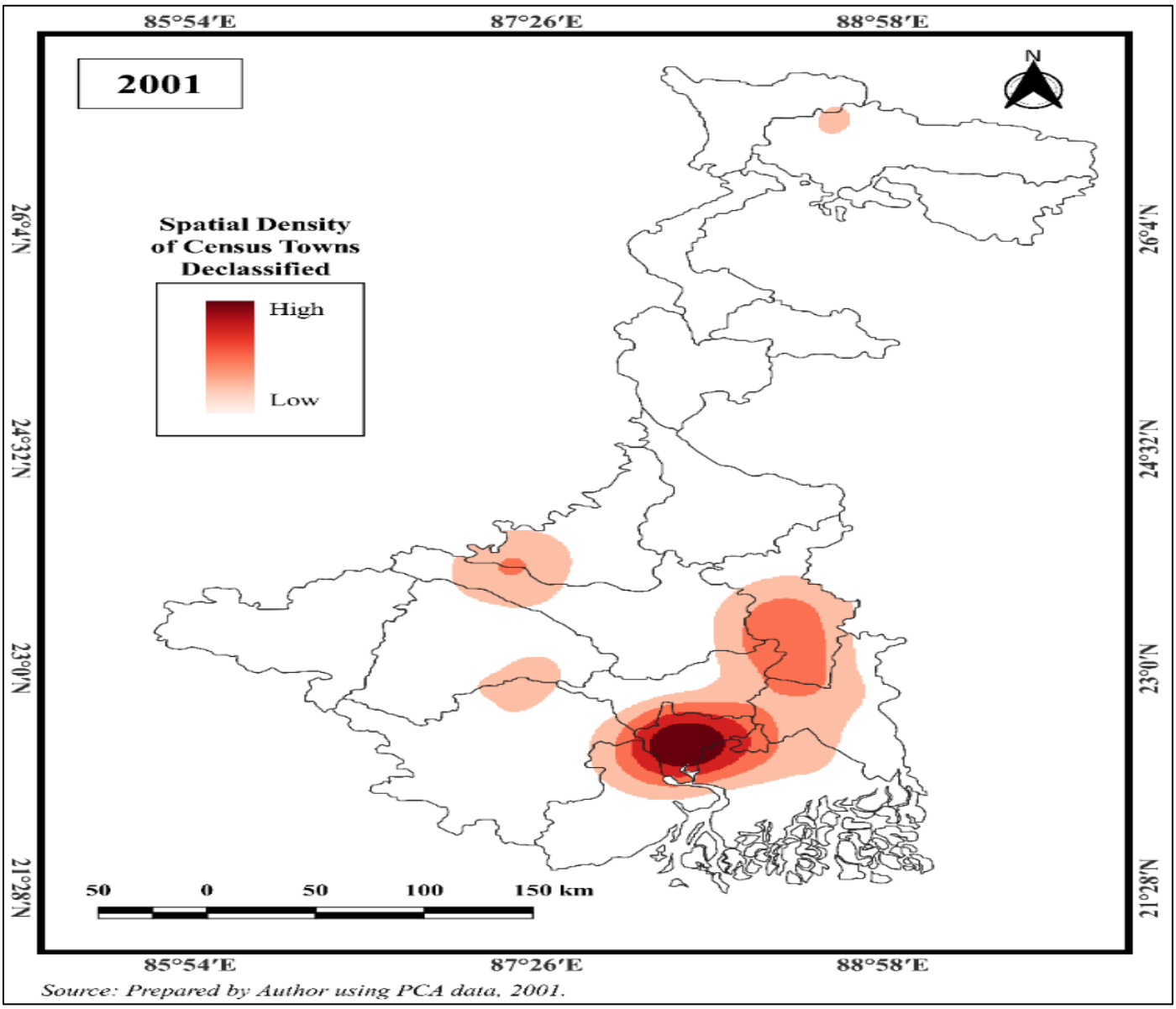

Fig 7 The declassified CTs in 2001 were spatially concentrated and show the presence of one major cluster around Howrah-Hooghly region and about three minor clusters in Nadia-(N&S) Parganas region, Barddhaman-Birbhum region and Bankura-Medinipur region.

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➢ *Spatial Direction of Distribution*

Again, due to the clustering nature of CTs only in 2001, the Standard Deviation Ellipse was designed to better understand the direction of the distribution. From Figure 8 it is pretty evident from the North-north-east and south-south-west tilt of the ellipse, the declassified CTs are mostly located in the central densely populated districts of Howrah, Hooghly, Barddhaman and Medinipur and somewhat follow a north south trend in its distribution.

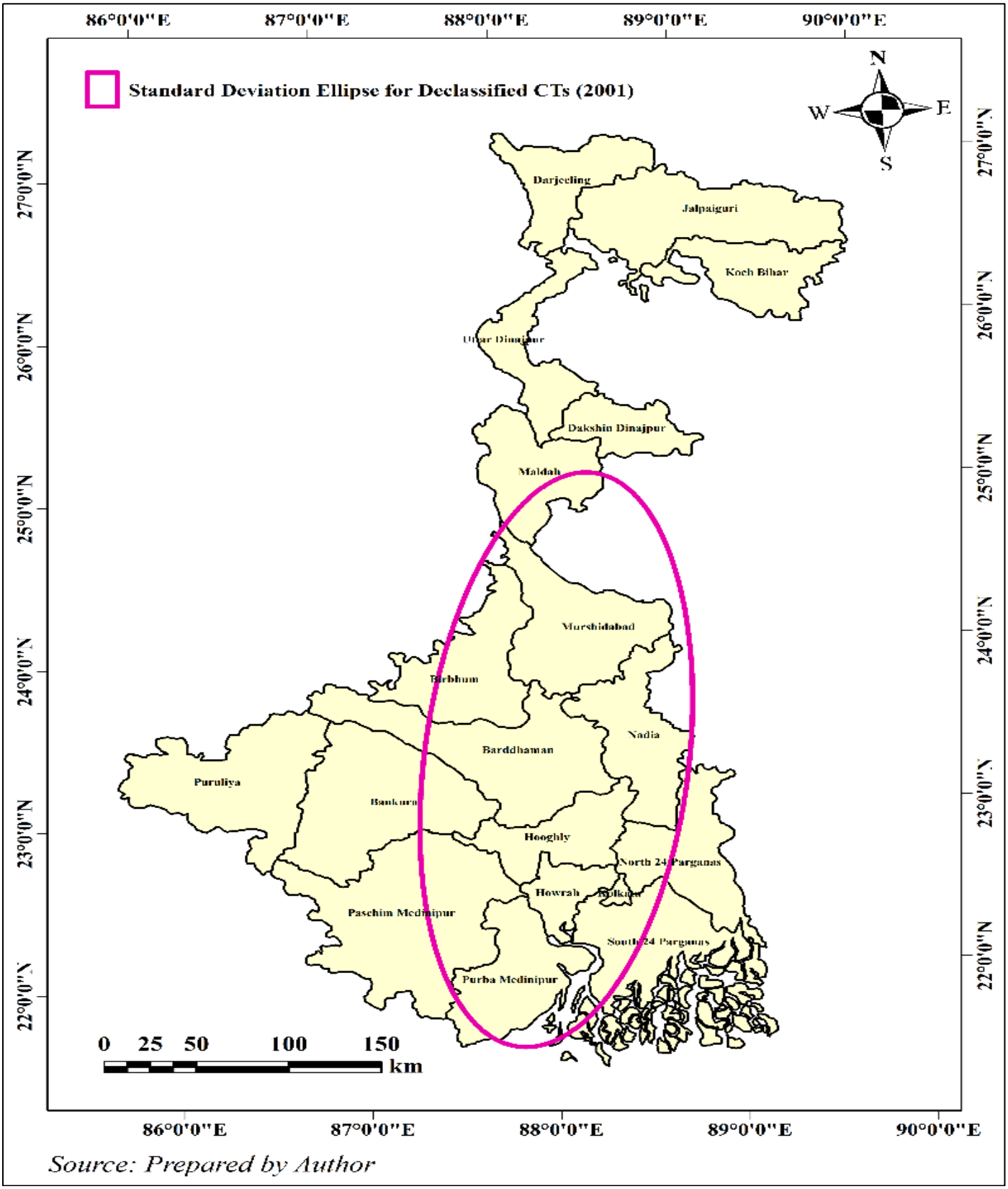

Fig 8 Standard Deviation Ellipse showing the direction of distribution of the declassified Census Towns in 2011.

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➢ *Spatial Distribution Association*

To test the homogeneity and presence of clusters among the declassified CTs, away from the district headquarters and large towns, a global autocorrelation measure based on the Global Moran's I have been prepared. This measure indicates the tendency of the CTs towards clustering or dispersion. The results (as seen from Fig. 9) imply the presence of clusters. Sub-centers with z-scores > 2.58 have been considered significant at 99% confidence level and are categorized as hot spots while z-scores < -2.58 indicate clustering of low values and hence termed cold spots.

The declassified CTs in the southern parts have a negative correlation among the surrounding CTs, which depict the clustering on non-similar values, while most of the northern districts have positive correlation indicating a positive correlation and clustering of similar values. However, a global Moran's I suggests clustering without designating any specific location as clustered (Sairi et al., 2021); it calls for identifying the locations of the individual clusters using Local Indicator of Spatial Association (LISA) to identify the specific types of clusters.

Cluster and Outlier analysis from Anselin Local Moran's I statistics, assumes homogeneity of the entire dataset and categorizes a location based on the type of association: either

- High values with high values (HH),
- Low values with low values (LL),
- High values with low values (HL) or
- Low values with high vales (LH).

(Anselin et al., 2006).

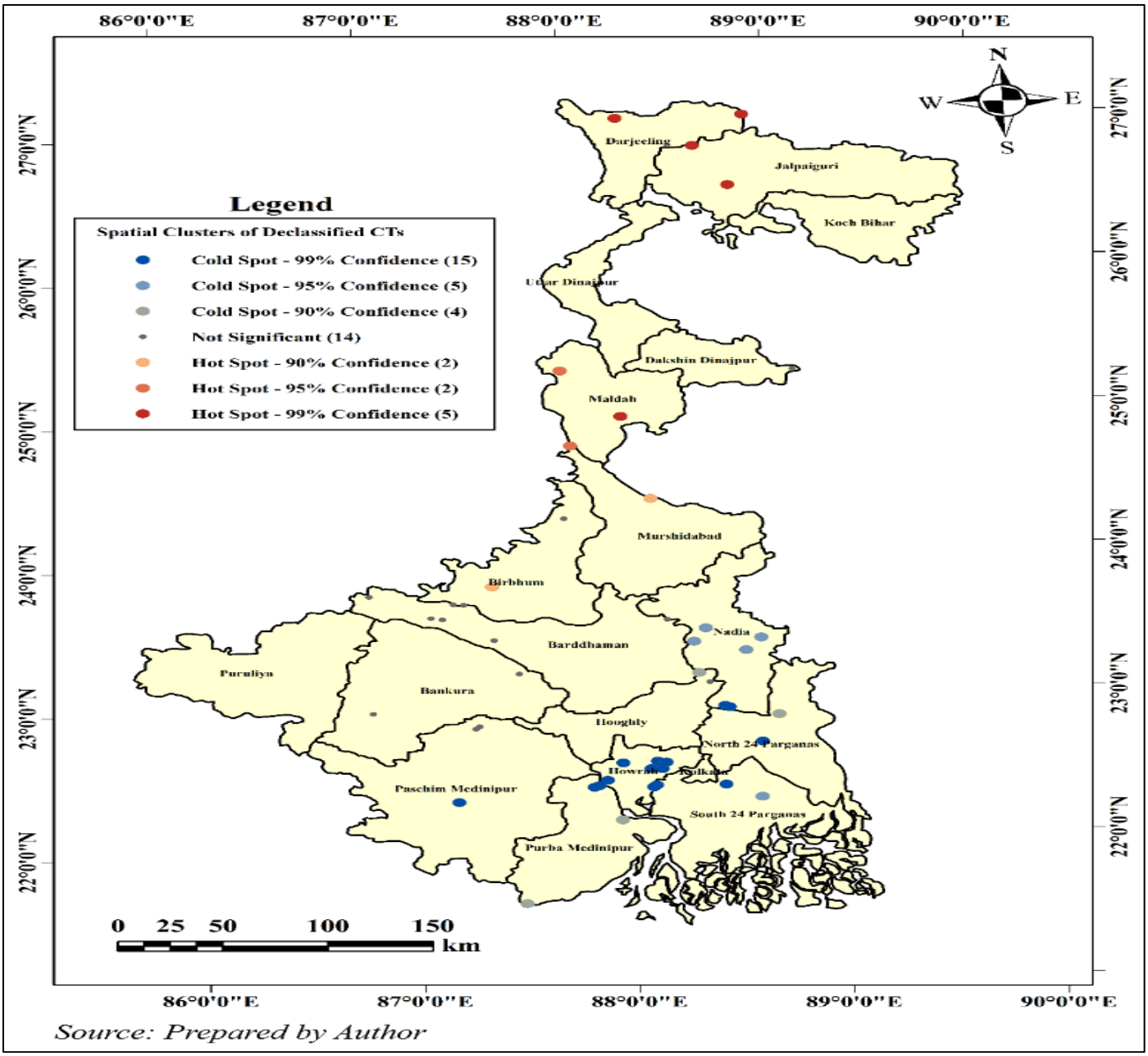

Fig 9 Identification of spatial clusters based on Global Moran's I

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The local Moran's I have helped in thoroughly identifying the location of clusters to obtain deeper and more thorough results. From Fig. 10, it can be analyzed that the CTs that were declassified between 1991 and 2011, has formed clusters mainly in the border areas, be it district borders, or state borders or close to international borders. A uniform pattern in the clustering has been seen.

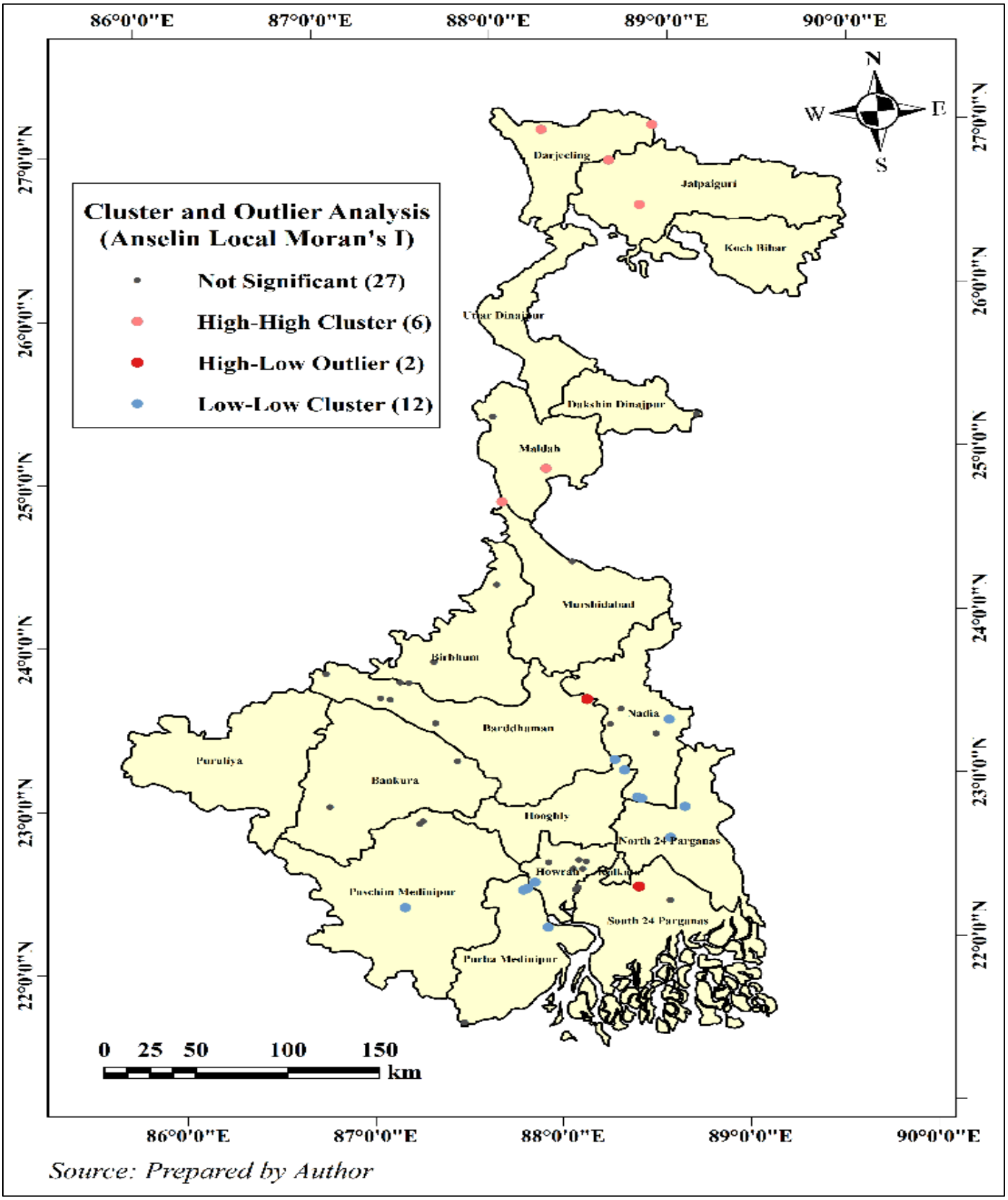

Fig 10 LISA Cluster map depicting the specific locations of clusters of Declassified CTs, confirming the clusters to be formed near the border areas.

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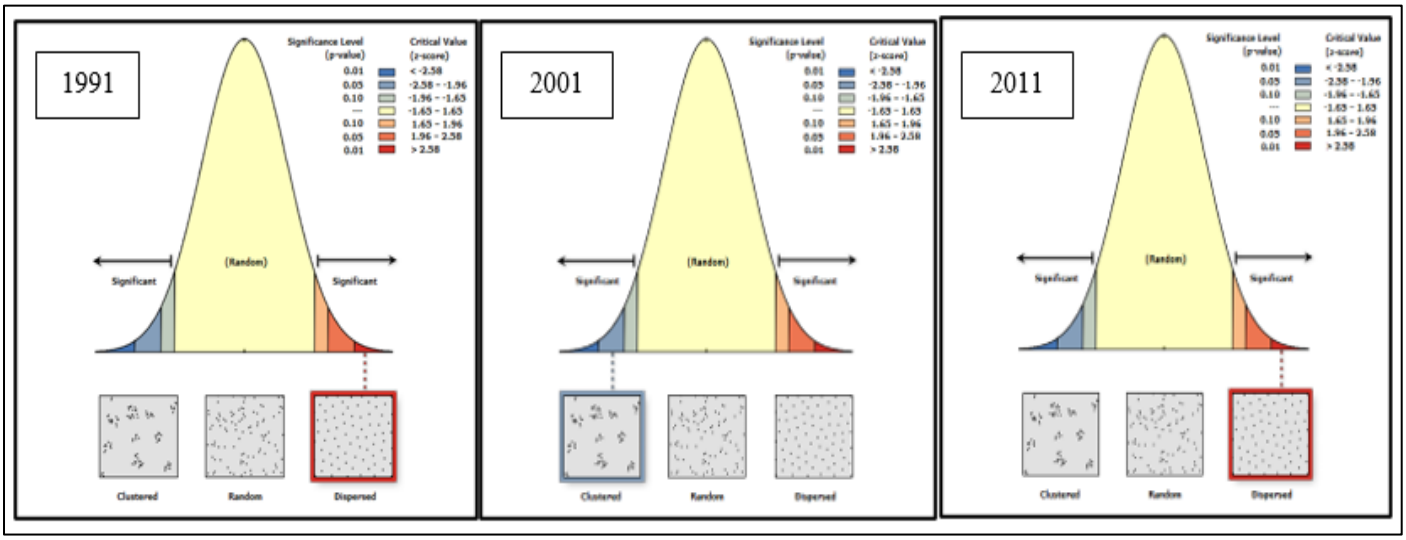

Fig 11 Nearest Neighbor Analysis results of the declassified CTs of West Bengal, confirming their dispersed nature in 1991 & 2011, which having a clustered nature in 2001.

➢ *Assessment on Reasons for Declassification of Census Towns in West Bengal*

Among the three criterions for classification of a place as census town, the threshold of 75% male main workers engaged in non-agricultural pursuits, is the most difficult to retain. As a result of this, CTs get declassified. Mostly, the declassification has been an outcome of growth of farm employment, and a decline in non-farm employment. This is a general overview of the cause of declassification of the CTs. However, the factors that leads to the decline in non-farm activities is not the same for all the districts and vary regionally. The factors have been identified based on the careful study of the census records, newspapers, articles, and local dialogue during field visits to certain selected declassified CTs.

- *Malda & Murshidabad:* The jute, silk and beedi industries present in these districts were the prime causes for development of CTs as these industries employ large number of people. However, these two districts are severely affected by river bank erosion and flood, almost every year. This causes a large displacement of people and the industries too have to suffer for this. As a result, the displaced population sorts to agricultural pursuits as a source of livelihood.

- *Darjeeling & Jalpaiguri:* Tea estates of Darjeeling and the timber trading in Jalpaiguri are suffering a major decline due to environmental concerns, which are forcing people to resort to farming.

- *Dakshin Dinajpur & Murshidabad:* Since these districts share a border with Bangladesh, most the border areas are subjected to border restructuring or geopolitical instabilities that hinder the development of non-agricultural activities. Also, these areas suffer from the problem of immigration of refugees from the porous international borders, thus disturbing the economic and social scenario of these districts.

- *Birbhum, Medinipur & Bankura:* These are the districts that abound in handloom or small scale/ cottage industries. Due to the rapid globalization, the demand for the local handicrafts is on a decline, thus rendering this profession unprofitable. Alternatively, people are moving towards agriculture as an alternative source of employment.

- *Barddhaman:* Most the newly formed CTs are located around the industrial complex belt of Barddhaman. Coal and sand mining are predominant in these areas. However, due to the rising geopolitical concerns and issues, out of a sense of fear and despair, people are getting bound to move to farm activities.

- *Nadia, North 24 Parganas & Hooghly:* These are mainly trading centers with many handloom and cottage industries. A major setback for these districts is the declining trade due to the rapid globalization and non-profitability of the cottage and handloom industries

- *Howrah & South 24 Parganas:* The jute industries in these districts are extremely sick and make use of old obsolete machineries and practices. This results in a decline in profitability, leading to many jute industries being permanently shut down. Since part of these districts abounds in fertile alluvial soil, profitable for cultivation, people are moving towards farming activities.

All these local reasons stand out to be important factors leading to a shift from non-farm to farming activities. Thus, it will result in a greater number of CTs to get declassified in the coming census. An estimation of the Census Towns that are likely to get declassified in the 2021 census has been analyzed in a later section of this paper.

➢ *Case Studies for Verification of Analysis and Perception Study*

Among the 47 declassified towns between 1991 and 2011, a few places were selected at random from the different districts, for the purpose of field visit and empirical observation. Since the latest data used for the study is that of 2011 and the field visits are from 2024, slight changes and modifications in certain areas have been seen during the field

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visit. However, dialogue with locals has been an important aspect to verify the reasons of declassification identified in the study (Fig. 12)

A perception study had also been carried out to get an idea of the awareness of the people about the non static "urban" status of the Census Town in the different census years. Also, an overall idea of their socioeconomic conditions was even studied.

Table 4 Survey responses about the level of awareness about the status of the CTs

Name of Census Town	No. of people surveyed (n)	Awareness level about the changing status of CTs		
		Aware	Unaware	Not Sure
Dhandadihi	24	1	23	0
Amta	19	3	15	1
Patuli	21	1	20	0
Jagannathpur	18	0	18	0
Patrasair	25	2	22	1
Nalhati	20	3	17	0
Canning	21	0	21	1
Total (N)	**148**			

From the study, the above mentioned causes have been identified (Fig. 12). As far as the awareness level is considered, most of the common people are unaware of the status of their town. Though these people enjoy some of the urban facilities like pakka houses, drinking water, primary healthcare centres, concrete roads, schools, etc., and have a decent livelihood, most of the people seem to be very casual about the changing status. They are unaware of the benefits that a census town will enjoy when they bear the "urban" status and seem to be happy with whatever they have. The only people aware about the status change of the CTs are the people engaged with the Panchayat or the administrative offices and the very educated ones only. This negligence of most of the common people is mainly due to lack of initiatives taken by the government to make the people aware about the status of their town or the benefits that the "urban" status can provide them, that they can voice and demand from the ruling government in future.

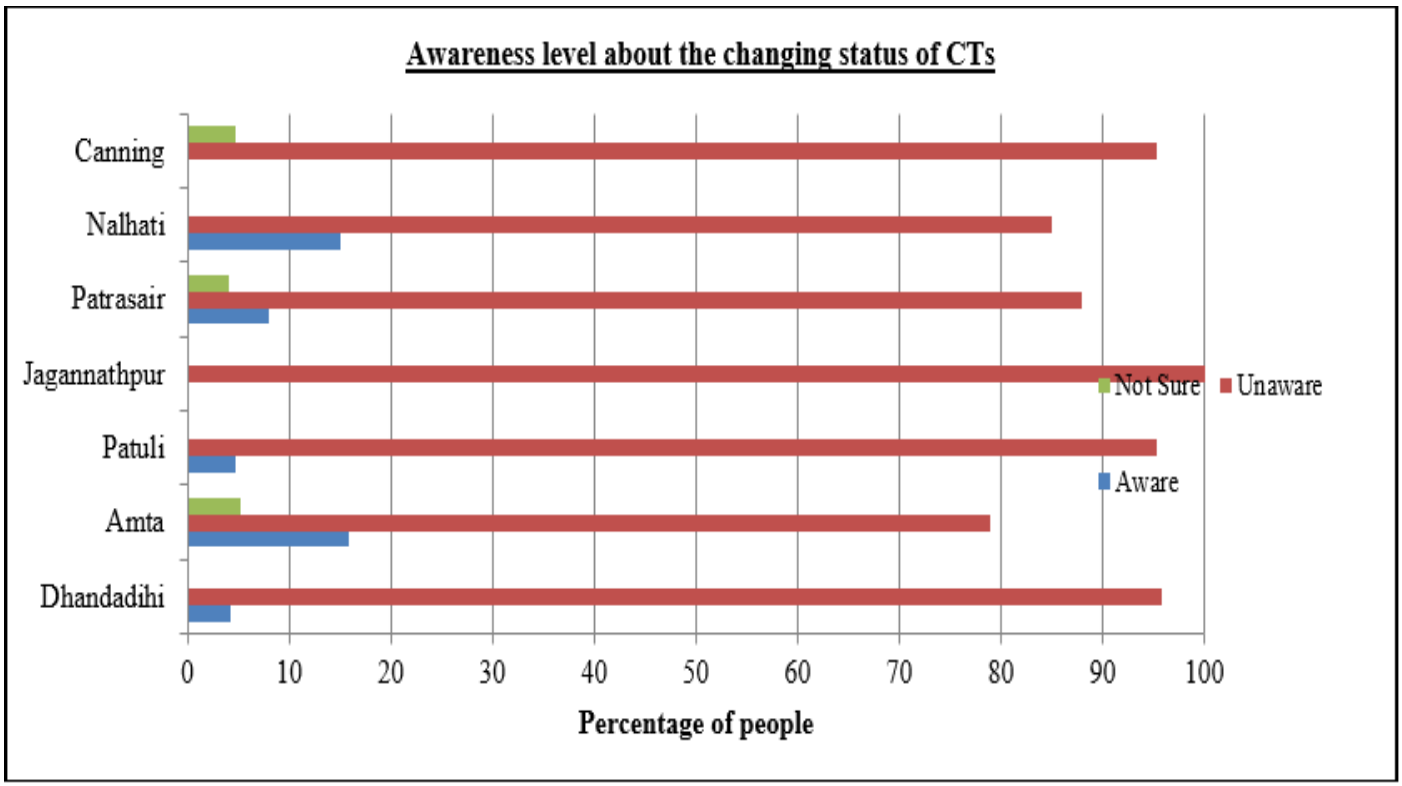

Fig 12 Awareness level of the residents of the selected CTs about the changing status of their town.

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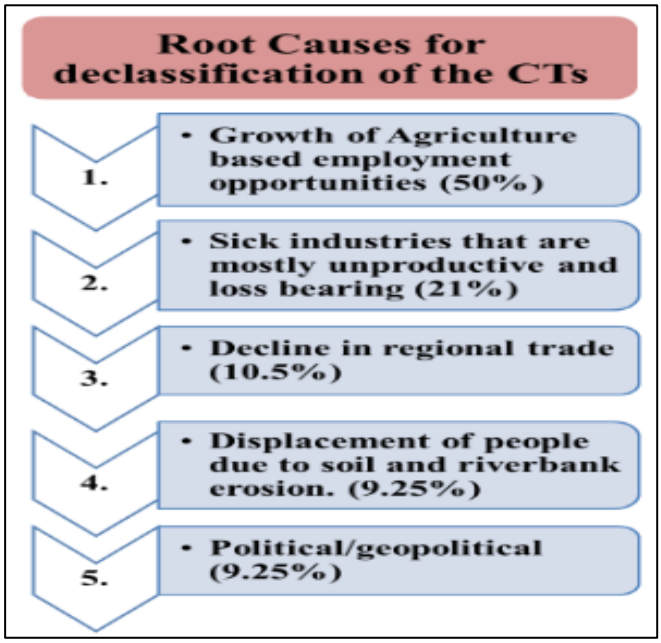
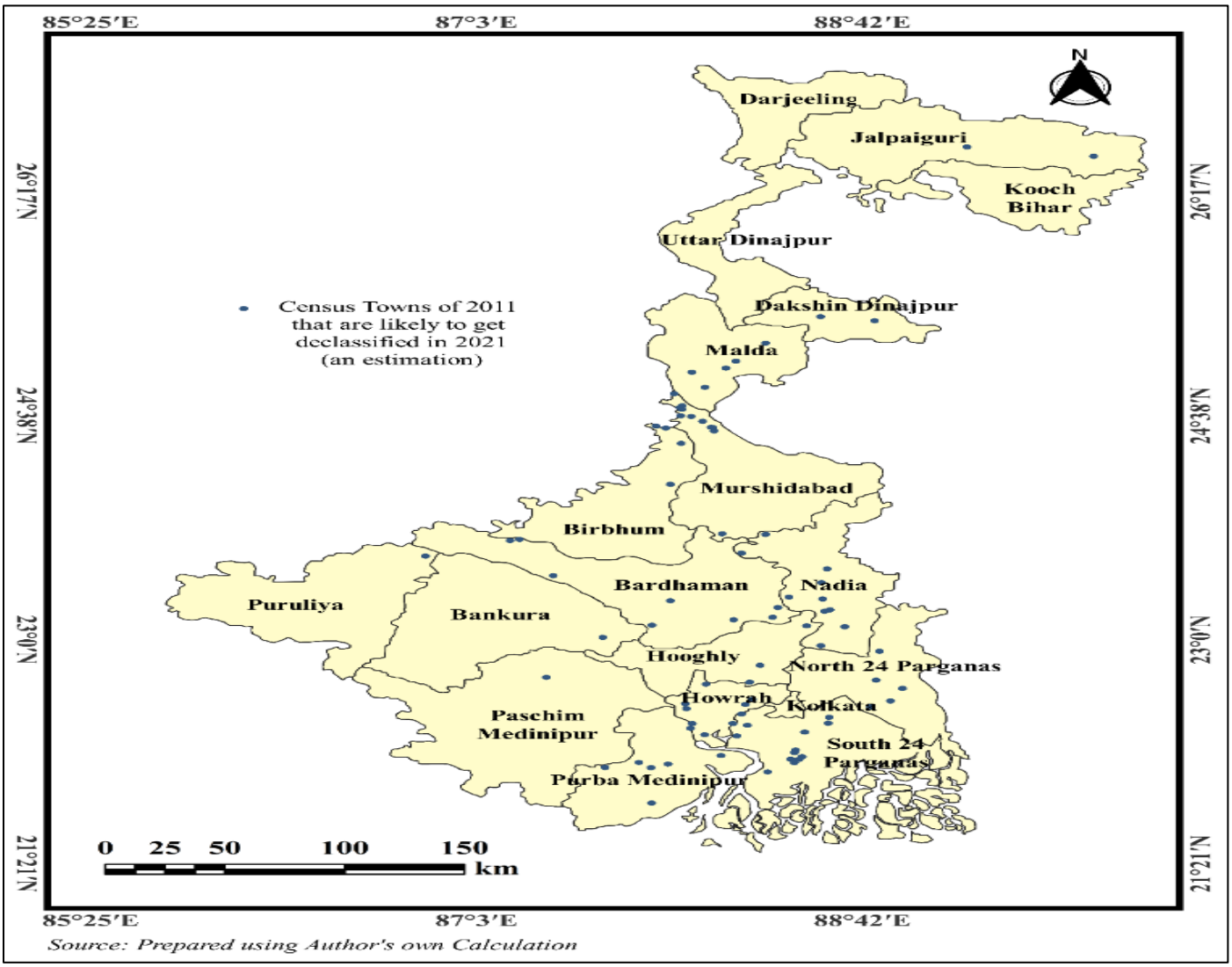


Fig 13 The causes for declassification of the CTs as identified during field visit.

The only people aware about the status change of the CTs are the people engaged with the Panchayat or the administrative offices and the very educated ones only. This negligence of most of the common people is mainly due to lack of initiatives taken by the government to make the people aware about the status of their town or the benefits that the "urban" status can provide them, that they can voice and demand from the ruling government in future.

- *A Future Estimation on the Declassification Trend of West Bengal*

Based on the eligibility criteria as prescribed by the RGI, upon careful analysis of the 2011 Census, a total of 81 Census Towns have been identified that are most likely to get declassified in 2021 census. These 81 Census Towns, will fail the criteria of share of male main workforce engaged in non-agricultural pursuits. Figure 13 shows the 81 estimated CTs that will get declassified.



Source: Prepared using Author's own Calculation

Fig 14 The 81 Census Towns that are likely to get declassified in the 2021 census (based on Author's calculation (Table 5), following the guidelines of RGI)

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A spatial pattern and trend analysis for the same has been attempted to get an overview of the nature of their distribution. The Kernel density analysis has been employed (in Figure 14) to understand their spatial concentration.

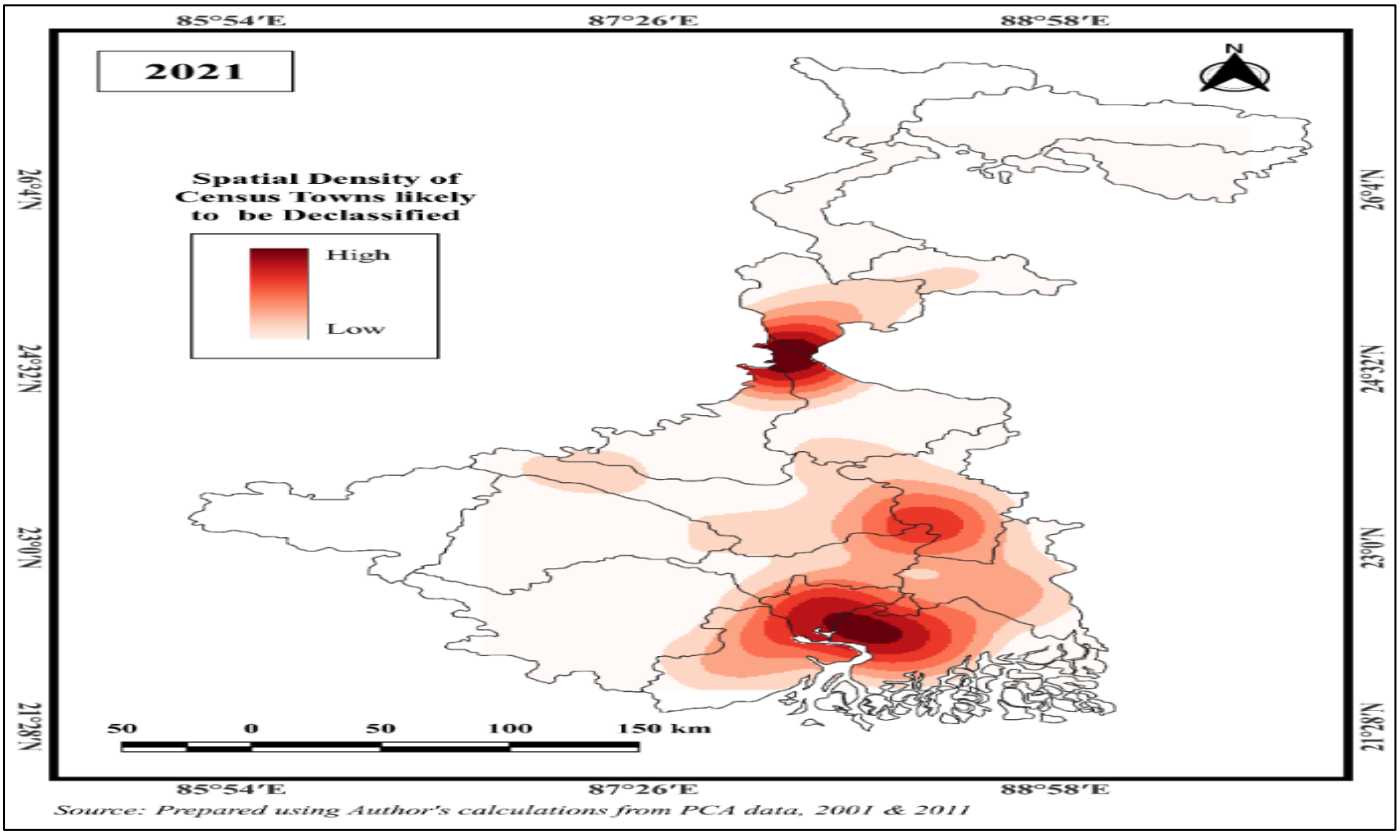

Fig 15 Spatial Concentration of CTs those are likely to be declassified in 2021

A major concentration is noticed in South 24 Parganas and in Murshidabad. Moderate spatial concentration is noticed in Nadia and Hooghly. It is striking to note that the number of CTs that will be declassified is relatively less in the western and northern part of the state.

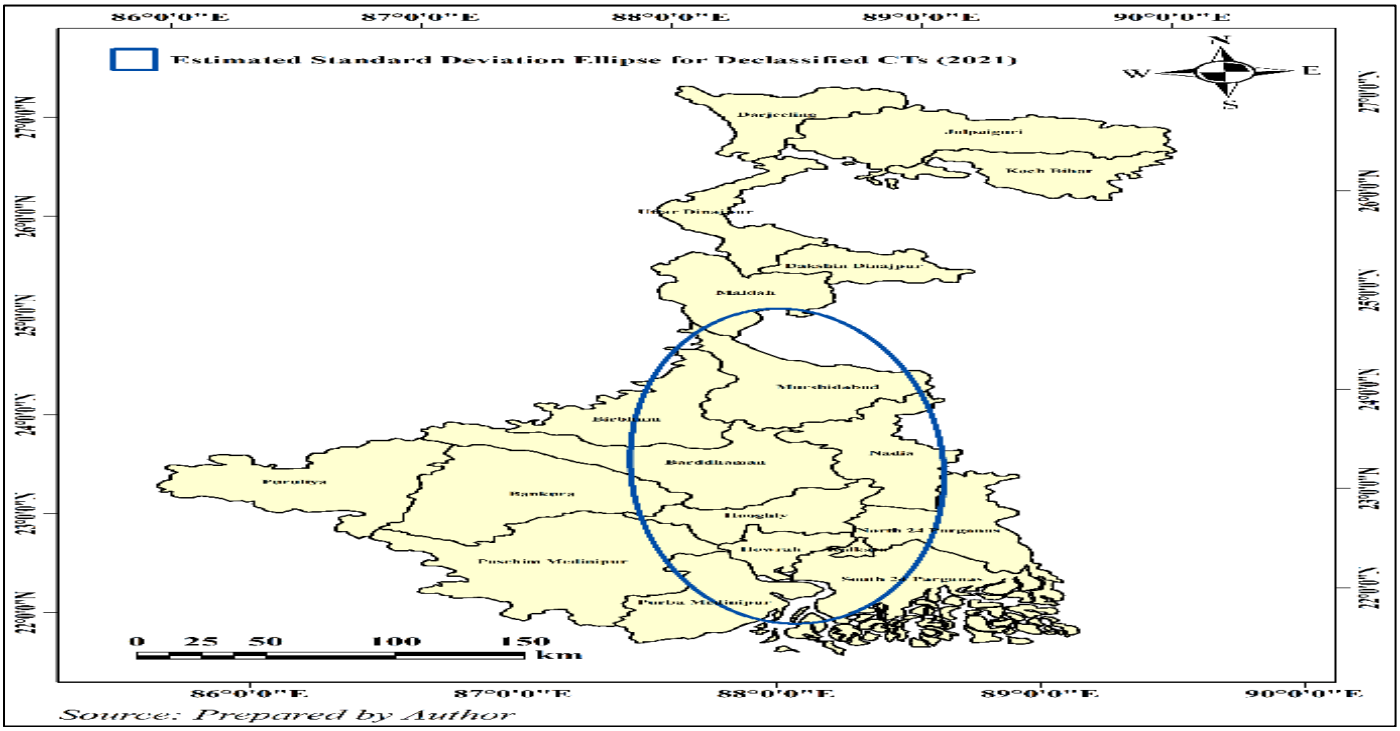

Fig 16 Standard Deviation Ellipse showing a north-south direction of spatial distribution in 2021

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To understand the direction of spatial distribution, a standard deviation ellipse has also been drawn (Fig 15). A perfect north-south distribution of these declassified CTs has been noticed. This is seen to be a change from the pattern noticed in 2011.

V. SUMMARY OF THE STUDY

- The Census Towns that are once promoted to be recognized as urban, must again qualify the same selection criterions to ensure the endurance of their urban status.
- A clustering nature has been noticed for the classified census towns between 1991 and 2011.
- As far as the Declassified CTs are concerned, for 1991 and 2011, a dispersed pattern has been noticed; only for 2001, a clustered nature has been noticed.
- The criterion that most CTs fail to retain which ultimately leads to their declassification is the share of male main workforce engaged in non-farm activities.
- Therefore, it is noticed that the growth of farm employment has a direct effect on the declassification of CTs.
- The local factors leading to decline in non-farm activities, varies regionally.
- In the 2021 census, it is estimated that about 81 CTs are likely to get declassified.
- Most of the common inhabitants of the CTs irrespective of their current status are unaware about the same and efforts should be made to publicly advertise and make them aware.

VI. GOVERNANCE IMPLICATIONS

➢ *Declassification of Census Towns have significant governance implications:*

- One of the major implications is the loss of funding. The declassified CTs may not receive the funding allocated for urban development, leading to reduced resources for infrastructure and services.

- The declassified Census Towns might get merged with the surrounding rural areas, that would reduce their administrative autonomy and decision-making power.

- Another significant implication of the declassification trend is that it leads to changes in service delivery, including healthcare, education, and sanitation, and other such services.

- There will be a reduced investment on the urban amenities' attainment.

VII. POLICY FRAMEWORK SUGGESTIONS

Keeping the governance implications of the declassification of Census Towns in mind, the government should formulate comprehensive policies at the regional (block) level. Despite the declassification, the towns should be continued to be recognized as urban so that they would continue to be able to access the appropriate funds and infrastructure allocated to urban regions. Since most of the Census Towns get declassified due to their failure to maintain the share required for non-farm male workforce, the declassified Census Towns should not be adhered strictly to rural management policies. The local governance not only should continue to provide the urban-centric facilities and services to these areas, but also make provisions to improve the non-farm employability scenario in these declassified towns, such that they may again get promoted to their urban status, the following census. Target specific development programs must be launched or implemented to foster economic development in these towns. This may involve provisions such as providing incentives to local businesses, cheaper interest rates on loans for small-scale industries and local entrepreneurship. All this will drive towards economic growth of these towns.

To provide the target-specific policies, the engagement of community in the planning and policy implementation stage is very crucial. The idea of inclusive governance should be brought into the picture. At the national level, the rural development strategy of Provision of Urban Amenities to Rural Areas (PURA), should pay a special focus on the declassified Census Towns, as these are areas which receive a socio-economic shock, right after their declassification, as they lose the allocations and fundings for urban development from the central government. It gets difficult to cope with rural provisions/amenities after once enjoying the urban benefits. Efforts should be made to identify the Census Towns that are likely or are on the verge of declassification, and provisions be made apriori, to better deal with the current scenario than doing it later.

Table 5 Estimated List of Census Towns that are likely to get declassified in 2021

District Name	Count	Names of towns
Paschim Medinipur	1	Naba Kola
Bankura	1	Kotulpur
Purulia	1	Murulia
Dakshin Dinajpur	2	Gopalpur, Par Patiram
Jalpaiguri	2	Jateshwar, Samuktola
Hooghly	3	Jirat, Ramanathpur, Nasibpur
Birbhum	4	Barua Gopalpur, Kashimnagar, Bishnupur, Ambhua
Maldah	5	Birodhi, Krishnapur, Jhangra, Karari Chandpur, Sonatala
North 24 Parganas	5	Minakhan, Dhanyakuria, Uttar Bagundi, Bara, Sadigachhi
Purba Medinipur	6	Hincha Gerya, Erashal, Barda, Amarshi Kasba, Benudia, Basantia

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Barddhaman	8	Almajora, Nimsa, Sehara, Alipur, Kendra Khottamdi, Uttara Goara, Ichhapur, Mirzapur
Nadia	9	Chapra, Kamgachhi, Gangni, Panpara, Sonda, Mira, Saguna, Haringhata Farm, Matiari
Howrah	9	Shashati, Khajutti, Jallabad, Karia, Naul, Shyampur, Banipur, Hirapur, Kanpur
Murshidabad	11	Bhasaipaikar, Ramakantapur, Jaykrishnapur, Fatellapur, Salar, Bhabki, Srimantapur, Mamrejpur, Mahadeb Nagar, Nayabahadurpur, Sibnagar
South 24 Parganas	14	Purba Ranaghat, Makhal Tala, Komarhat, Chandpala Anantapathpur, Mathurapur, Bangsidhapur, Poali, Buita, Patharberia, Ajodhyanagar, Purba Bishnupur, Tulsighata, Krishna Chandrapur, Dhola

Source: Based on Author's own computation following the guidelines of RGI

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