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Human Development and Fertility in India

Aalok Ranjan Chaurasia

MLC Foundation
'Shyam' Institute

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Abstract

This chapter analyses the association between human development and fertility based on the variation in human development and fertility across districts. The analysis reveals that, although there is a statistically significant negative relationship between human development and fertility across the districts of the country, yet the relationship is not strong. Inter-district variation in the level of human development explains only a part of the inter-district variation in fertility in India. The analysis suggests that there are factors other than individual capacity, individual knowledge and individual standard of living which have more dominating effect on the inter-district variation in fertility in the country. Reduction in inter-district variation in human development, however, contributes to reduction in inter-district variation in fertility.

Introduction

The evidence presented in this monograph has highlighted persistent and pervasive variation in both demography and human development across the districts of India. In nearly half of the districts of the country, fertility now appears to have decreased below the replacement level but it remains above the replacement level in other districts and exceptionally high in some of the districts. Similarly, the progress towards human development varies widely across districts not only in terms of the surface measure of human development but also in terms of human development profiles and unevenness of the progress in different dimensions of human development. These variations are expected because of the mesmerising social, cultural and economic diversity of the country India. India is quite often christened as the country of countries from the perspective of both demography and development. This diversity also emphasises the need of a decentralised approach for planning and programming to meet the development and welfare needs of the people of the country. The inter-district diversity in both demography and human development elaborated in this monograph also calls for examining the linkages between demographic dynamics and the state of human development at the district level that may serve as evidence for integrating demographic factors in planning and programming for human development activities at the district level. Such an integration is necessary to ensure that progress in human development leads to demographic transition and demographic transition contributes to accelerating the progress in human development. Given the vastness and the diversity of the country India, it is obvious that there can be no universal approach to both demographic transition and progress in human development that can be applied uniformly to all districts of the country. The challenges of addressing demographic issues and advancing human development are different in different districts of the country. The need of the time is to identify uniformities in the diversity in both demography and human development across the districts of the country.

Attempts to explore how human development contributes to fertility transition has a long history (Luci and Thévenon, 2010). The demographic transition theory asserts that progess in the three core dimensions of human development - individual capacity, individual knowledge and individual standard of living – are related to demographic transition, especially trensition in fertility (Bryant, 2007; Notestein, 1945; Davis, 1945). This means the fertility and human development are inversely related – the higher the human development the lower the fertility and vice versa. However, the relationship between fertility and human development does not appear to be linear. At low and medium levels, human development appears to promote fertility transition but at advanced lebvel of human development fertility and human development relationship is observed to be weak in some studies (Wilson and Airey, 1999; Myrskylä et

al, 2009; Fox et al, 2019), although the association remains negative (Myrskylä et al, 2009; Furuoka, 2009; Myrskyläet al, 2011; Esping-Andersen and Billari, 2015; Goldscheider et al, 2015). In India, both the level of human development and the level of fertility varies widely across the districts. There are districts in which fertility has decreased to very low levels. At the same time, there are districts in which fertility still remains more than 4 births per woman of reproductive age. Similarly, there are districts where human development is at an advanced stage, whereas there are districts where human development remains unacceptably low. Inter-district variation in the level of fertility and in human development in India provides an opportunity to examine the relationship between fertility and human development in the Indian conext. This chapter attempts to examine the relationship between fertility and human development in India based on the district level data through both bivariate and multivariate analysis of the relationship between inter-district variation in human development and inter-district variation in fertility within the country. The bivariate analysis regresses fertility, measured in terms of total fertility rate (TFR) on the surface measure of human development which is a composite index of human development that captures the progress in the three dimensions of human development – individual capacity, individual knowledge, and individual standard of living. The multivariate analysis includes regressing total fertility rate on the probability of survival in the first five years of life (HE), secondary school net attendance ratio (ED) and the proportion of households having wealth index at least second quintile of the inter-household distribution of wealth index (SL) and classification or segmentation of districts according to the nature or the characteristic of human development (HDS). The classification or segmentation analysis provides deeper understanding of how the nature of human development influences fertility across the districts of the country. The analysis is based on the district level data available from the latest, 2019-2021 round of the National Family Health Survey.

Fertility and Human Development

The bivariate relationship between fertility and human development across the districts of the country is depicted in figure 1 in terms of the scatter plot of inter-district variation in TFR and inter-district variation in HDS. The district level data available from the National Family Health Survey suggest that human development and fertility is inversely related – the higher the level of human development the lower the fertility and vice versa. The relationship, however, is not strong as there are districts where human development is well advanced but fertility remains high. Similarly, there are districts where human development is either low or very low but fertility is also low or very low. More specifically, there are 144 districts where the human development is well advanced (HDS$\geq$0.900) but TFR is below the replacement level (TFR=2.1) in only 117 of these districts. Similarly, there there are 102 districts in which human development is low or very low (HDS$<$0.600) but, in 12 of these districts, TFR is below the replacement level. Human development contributes to fertility transition but fertility transition appears to be influenced by other factors also.

The relatively weak relationship between human development and fertility across the districts is confirmed by the ordinary least square regression of TFR on HDS (Table 1). The regression coefficient of HDS is stastically significant and negative which confirms that advancement in human developmment contributes to the reduction in fertility. However, inter-district variation in HDS explains less that 35 per cent of the inter-district variation variation in TFR. The TFR is not the lowest in that district in which HDS is the highest. Similarly, TFR is not the highest in that district of the country in which HDS is the lowest. Inter-district variation in TFR and HDS confirms that fertility is negatively associated with human development but human development is not the only determinant of fertility. Figure 1 and table 1 suggest that there are factors other than human development – individual caapcity, individual knowledge and individual standard of living - which also influence inter-district variation in fertility within the country.

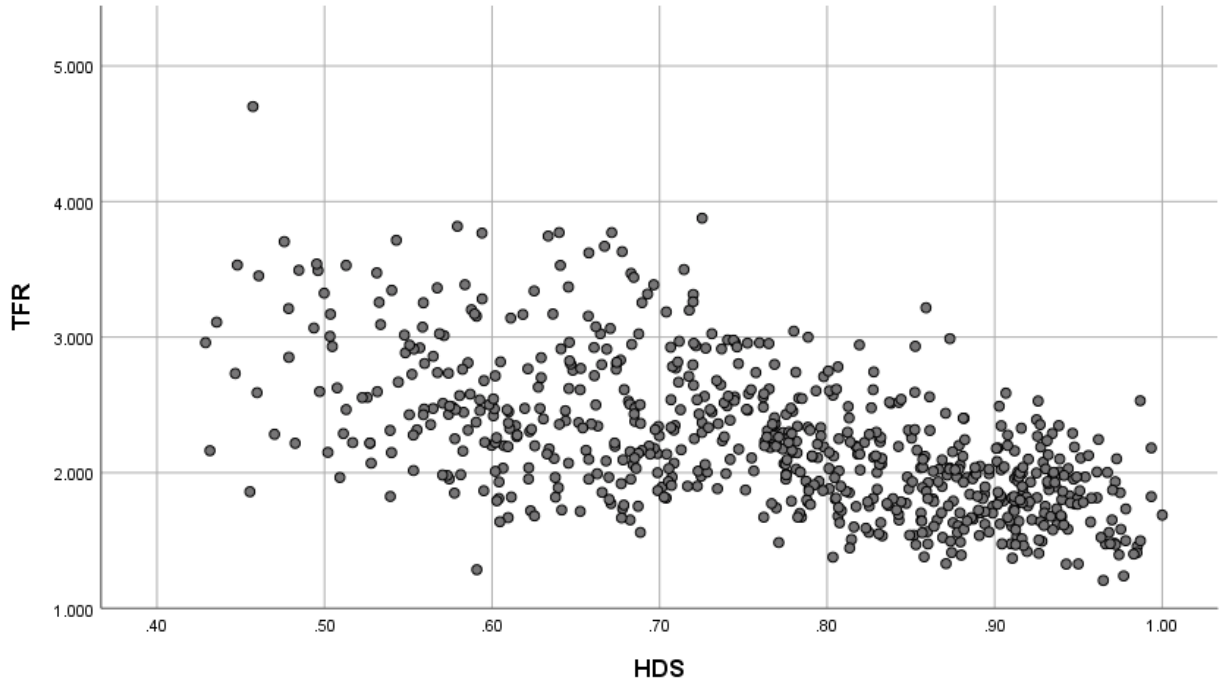

Figure 1: Association between the level of fertility (TFR) and human development (HDS) across 707 districts of India.
Source: Author.

Table 1: Regression of TFR on HDS based on district level estimates of TFR and HDS.

Independent variable	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	β		
Surface measure of human development (HDS)	-2.267	0.119	-0.584	-19.097	0.000
Constant	3.956	0.092		43.018	0.000
R^2					0.341
R^2 Adjisuted					0.340
N					707

Source: Author

The HDS is the composite indicator that encapsulates of the probability of survival in the first five years of life (HE) reflecting individual capacity, secondary school net attendance ratio (ED) reflecting individual knowledge, and proportion of households having the wealth index equal to or more than the second quintile of the inter-household distribution of wealth index (SL) reflecting individual standard of living. Regression of TFR on HDS does not reveal the relative influence of the three dimensions of human development on TFR. Table 2 presents results of the regression of TFR on HE, ED, and SL. The table suggests that inter-district variation in all the three dimensions of human development are statistically significantly negatively associated with the inter-district variation in TFR. The table also suggests that, among the three dimensions of human development, the influence of inter-district variation in the individual knowledge dimension of human development on inter-district variation in fertility is the relatively the highest while the influence of inter-district variation in the individual capaity dimension of human development is relatively the lowest. The relationship, however, remain not strong as inter-district variation in HE, ED and SL explains only about 40 per cent of the inter-district variation in TFR which is, however, higher that the variation explained by HDS.

Table 2: Results of the regression of TFR on HE, ED, and SL based on district level data.

Independent variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
Probability of survival in the first five years of life (HE)	-4.240	0.792	-0.178	-5.353	0.000
Secondary school net attendance ratio (ED)	-1.575	0.174	-0.319	-9.054	0.000
Proportion of households having at least second quintile of wealth index distribution (SL)	-0.613	0.071	-0.296	-8.693	0.000
Constant	7.970	0.718		11.095	0.000
R^2					0.404
R^2 Adjusted					0.401
N					707

Source: Author

A comparison of table 1 and table 2 also suggests that the inter-district variation in TFR explained by the inter-district variation in (HDS) based on the bivariate regression of TFR of HDS is smaller than the inter-district variation in TFR explained by the inter-district variation when the three dimensions of human development are treated independently in the regression analysis. This means that the explanatory power of human development in explaining the variation in fertility is weakened when human development is measured in terms of a composite index as compared to when the three dimensions of human development are treated independently in exploring fertility and human development relationship. This loss of explanatory power is expected as there is always some loss of information when a set of indicators (vector) is represented through a single indicator (scalar) through some aggregation function that combines the indicators in the set into a single indicator. Table 2 suggests that it is more appropriate to analyse the relationship between fertility and human development by treating different dimensions of human development independently rather than by combining them into a single composite index.

Classification of Districts

The foregoing discussions show that fertility in a district is influenced by the progress in the three dimensions of human deveelopment – individual capacity, individual knowledge and individual standard of living – and the influence of the progress in the three dimensions is not the same. On average, the influence of the individual knowledge dimension of human development on fertility is relatively the highest whereas the influence of the individual capacity dimension is relatively the lowest. This means that the defining characteristics of human development in a district may also influence the level of fertility in the district. As discussed in the earlier chapters, human development may be characterised in terms of the human development profile or the relative ordering of the progress in the three dimensions of human development and the inequality in progress in the three dimensions in the district. It has been shown in Chapter ____ that human development in the districts of the country can be characterised into 8 human development profile dependening upon whether the progress is relatively the most advanced in the individual capacity dimension or the individual knowledge dimension or the individual standard of living dimension of human development. On the other hand, the human development inequality or the difference in progress in the three dimensions of human development in a district has also been found to vary widely across the districts. Any analysis of the relationship between inter-district variation in fertility and inter-district variation in human development, therefore, should also consider the inter-district variation in these characteristics of human development.

The classification modelling approach (Han et al, 2012; Tan et al, 2006) has been used to classify districts into mutually exclusive yet exhaustive groups or clusters of districts to analyse how fertility varies in different different groups or clusters of districts having distinct human development characteristics defined in terms of HE, ED, and SL and in terms of human development profile and human development inequality. There are different methods of classification available for the purpose. These include support vector machine (Urso et al, 2019), decision or classification tree (Liu et al, 2016), logistic regression (Leon, 1998), nearest beighbour (Parihari et al, 2023), imbalanced classification (Sun et al, 2009), random forest (Ho, 1998), multiclass classification (Venkatesan, 2016), neural network (Muratbek and Bektemisova, 2024) and others. The decision or classification tree method is a powerful statistical method that is popularly used for the purpose of classification. It is a non-parametric, recursive partitioning method which does not require any assumption about the data distribution and is robust to outliers. It is easy to interpret and understand, and can be used even when the underlying data are heavily skewed.

Different statistical techniques have been proposed to construct a decesion or classification tree. The popular ones are classification and regression trees (CART) (Brieman, et al. 1984), Chi-squared automatic interaction detection (CHAID) (Kass, 1980), and quick, unbiased, efficient, statiictical tree (QUEST) (Loh and Shih, 1997). A comparison of these techniques is given elsewhere (Song and Lu, 2015). The classification and regression trees (CART) technique is used here to classify districts into mutually exclusive and exhaustive groups or clusters in such a way that within-group homogeneity in the level of fertility is the maximum. A cluster or a group in which the level of fertility is the same for all districts in the cluster or group is termed as “pure”. If a cluster is not pure than the impurity in the cluster can be measured through the Gini index. The dependent variable in CART can be both categorical or continuous. When the dependent variable is a categorical one, CART produces the classification tree with the proportionate distribution of data in different categories in each identified cluater. When the dependent variable is a continuous one, CART produces the regression tree with estimates of arithmetic mean and standard deviation of the dependent variable in each identified cluster. In the present case, the dependent variable is the level of fertility in the district, measured in terms of TFR, which is a continuous variable. The CART, therefore, has generated the regression tree with estimates of mean fertility and associated standard deviation in each identified cluster.

The independent or the explanatory variables used in the classification modelling exercise are related to the defining characteristics of human development in each district. Five indicators have been used to characterise human development: 1) probability of survival in the first five years of life (HE) which reflects the progress in the individual capacity dimension of human development; 2) secondary school net attendance ratio (ED) which reflects the progress in the individual knowledge dimension of human development; 3) proportion of households having wealth index at least second quintile of the inter-household distribution of wealth index (SL) which reflects the progress in the individual standard of living dimension of human development; 4) human development profile (HDP) which captures the relative ordering of progress in individual capacity, individual knowledge, and individual standard of living dimensions of human development in terms of indexes H, E and I defined in Chapter ____; and 5) human development inequality (HDE) which reflects the inequality in progress in the three dimensions of Human development and is measured in terms of the difference between the arithmetic mean and the geometric mean of the index H, E and I. The difference in the arithmetic meand and the geometric mean of the three indexes is large if the progress in the three dimensions of human development is highly uneven and vice versa. The human development profile (HDP) and human development inequality (HDE) are constructed from HE, ED, and SL as discussed in the previous chapter. Out of the five independent variables used for classifying districts, four are continuous variables while the human development profile (HDP) is a categorical variable. The advantage of CART is that it can handle both continuous and categorical variable simultaneously.

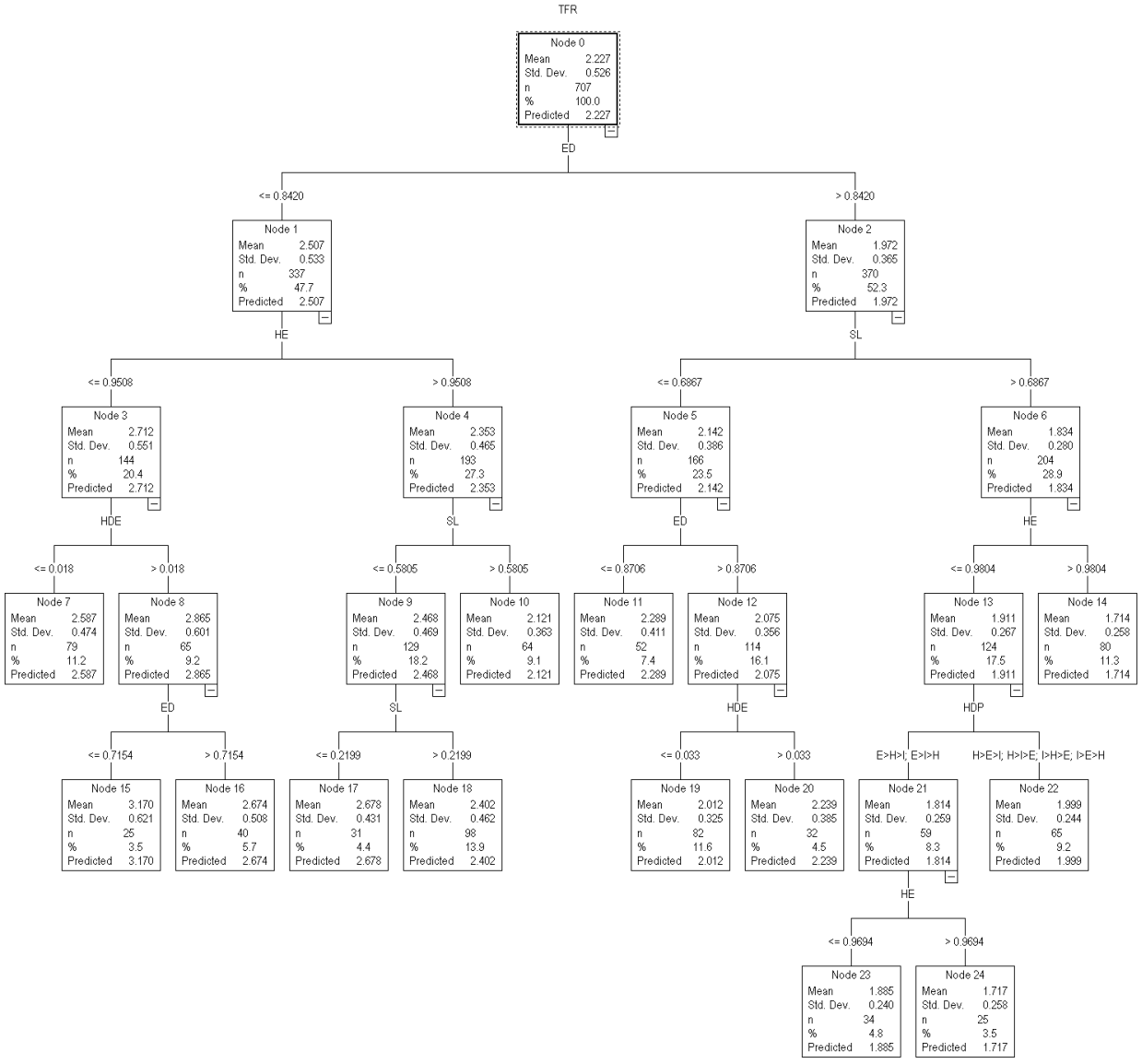

Figure 2: The classification tree showing the segmentation of districts in terms of fertility and characteristics of human development.
Source: Author

Results of the classification exercise are presented in the form of classification tree in figure 1 and are summarised in table 1. The mean TFR across the 707 districts of the country is estimated to be 2.227 ± 0.526 births per woman of childbearing age (15-49 years). At the first stage of classification, the 707 districts were classified into two groups (Node 1 and Node 2) based on the secondary school net attendence ratio (ED) – districts having ED$\leq$ 0.842 and districts having ED$>$0.842. There are 337 districts in Node 1 and the mean TFR (2.507 ± 0.533) in these districts is substantially higher than the mean TFR (1.972 ± 0.365) of 370 districts of Node 2. At the second stage of classification, districts of Node 1 were classified into Node 3 and Node 4 based on the probability of survival in the first five years of life (HE) – districts having HE$\leq$0.951 and districts having HE$>$0.951. There are 144 districts in Node 3 and mean TFR of these districts is 2.712 ± 0.551 whereas there are 193 districts in Node 4 and the mean TFR is

2.353±0.465. On the other hand, districts of Node 2 were classified into Node 5 and Node 6 based on the proportion of households having wealth index at least second quintile of the inter-household distribution of wealth index (SL), districts having SL≤0.687 and districts having SL>0.687. There are 186 districts in the Node 5 and the mean TFR of these districts is 2.142±0.386 compared to the mean TFR 1.834±0.280 of 204 districts of Node 6. At the third stage of classification, districts belonging to Node 3 were divided further on the basis of ED into Node 7 and Node 8; districts belonging to Node 4 were divided on the basis of SL into Node 9 and Node 10; districts belonging to Node 5 were divided on the basis of ED into Node 11 and Node 12; and districts belonging to Node 6 were divided on the basis of HE into Node 13 and Node 14. There was no further branching of Nodes 7, 10, 11, and 14 as the classification criteria was achieved. On the other hand, districts of Node 8 were divided further in based on ED into Node 15 and Node 16; districts of Node 9 were divided further into Node 17 and Node 18 based on SL; districts of Node 12 were divided into Node 19 and Node 20 based on HDE; and districts of Node 13 were divided into Node 21 and Node 22 based on HDP. At the last stage of classification, districts of Node 21 were divided into Node 23 and Node 24 based on HE.

There are 13 terminal nodes in figure 2. No further branching of these nodes was possible given the classification criteria. This means that the 707 districts of the country can be grouped into 13 mutually exclusive and exhaustive clusters (Nodes) depending upon the distinguishing charaterstics of human development in different cluster and average TFR is different in different clusters. Table 3 gives the characteristic features of human development in each cluster (Node) in terms of probability of survival in the first five years of life (HE), secondary school net attendance ratio (ED), and proportion of households having wealth index at least second quintile of inter-household distribution of wealth index (SL), human development profile (HDP) and human development inequality (HDE). Among the 13 mutually exclusive and exhaustive clusters, mean TFR is the highest (3.170±0.621) in Node 15 comprising of 25 districts. The probability of survival in the first five years of life in districts of this cluster (HE) is less than or equal to 0.951 while the secondary school net attendance ratio (ED) is less than or equal to 0.751 and the human development inequality or the difference between the arithmetic mean and geometric mean of H, ED, and SL is large (>0.018) which means that there is substantial difference in progress in the three dimensions of human development in the districts of this cluster. On the other hand, mean TFR is the lowest (1.714±0.258) in Node 14 comprising of 80 districts. In these districts, HE>0.980; ED>0.842 while SL>0.687 irrespective of the human development profile (HDP) and human development inequality (HDE) in the districts of this cluster. Mean TFR is also very low in Node 24 comprising of 25 districts. In these districts, HE ranges between 0.969-0.980; ED>0.824; SL>0.687 and the progress is relatively the most advanced in the individual knowledge dimension of human development compared to individual capacity and individual standard of living dimensions of human development. Because of very high levels of HE, ED, and SL in districts of this cluster, the human development inequality or the difference between the arithmetic mean and geometric mean of HE, ED, and SL is not large. In other clusters also, the characteristics of human development is different and so is the average TFR.

The classification exercise also highlights the importance of the inequality in progress in different dimensions of human development)HDE) and the human development profile (HDP) in determining average fertility. For example, there are 144 districts in which HE≤0.951 while ED≤0.842 (Node 3). In 79 of these districts, the human development inequality, HDE≤0.018 (Node 7) whereas in 65 districts, HDE>0.018 (Node 8) so that average TFR of districts in Node 7 is 2.657 while the average TFR of districts in Node is 2.865. Similarly, there are 124 districts in which HE≤0.980 whereas ED>0.842 (Node 13). Out of these 124 districts, human development profile (HDP) is characterised by either E>H>I or E>I>H in 59 districts (Node 21) which means that the progress in the individual knowledge dimension of human development is relatively the most advanced in these districts. On the other hand, the human development profile in the remaining 65 districts is characterised by either H>I>E oe H>E>I or I>H>E or I>E>H (Node 22) and average TFR in districts of Node 21 is substantially lower than the average TFR in districts of Node 22.

Table 3: Mean fertility (TFR) and characteristics of human development in mutually exclusive and exhastive clusters of districts identifie d through classification modelling exercise.

Node	Predictor variables					Total fertility rate (TFR)				Surface measure of human development (HDS)		Number of districts
	HE	ED	SL	HDP	HDE	Mean	SD	Median	IQR	Mean	SD	
15	≤0.951	≤0.715			>0.018	3.170	0.621	3.171	0.604	0.545	0.083	25
7	≤0.951	≤0.842			≤0.018	2.857	0.475	2.559	0.669	0.705	0.087	79
17	>0.951	≤0.842	≤0.220			2.678	0.431	2.734	0.717	0.521	0.045	31
16	≤0.951	0.715-0.842			>0.018	2.674	0.508	2.598	0.717	0.601	0.054	40
18	>0.951	≤0.842	0.220-0.581			2.402	0.462	2.352	0.528	0.666	0.058	98
11		0.824-0.871	≤0.687			2.289	0.411	2.286	0.577	0.718	0.071	52
20		>0.871	≤0.687		>0.033	2.239	0.385	2.186	0.385	0.678	0.065	32
10	>0.951	≤0.842	>0.581			2.121	0.363	2.092	0.503	0.821	0.048	64
19		>0.871	≤0.687		≤0.033	2.012	0.325	1.987	0.418	0.804	0.038	82
22	≤0.980	>0.842	>0.687	H>E>I H>I>E I>H>E I>E>H		1.999	0.244	1.982	0.327	0.917	0.029	65
23	≤0.969	>0.842	>0.687	E>I>H E>H>I		1.885	0.240	1.849	0.339	0.894	0.031	34
24	0.969-0.980	>0.842	>0.867	E>I>H E>H>I		1.717	0.258	1.712	0.379	0.898	0.025	25
14	>0.980	>0.842	>0.687			1.714	0.258	1.660	0.333	0.934	0.037	80

Source: Author.

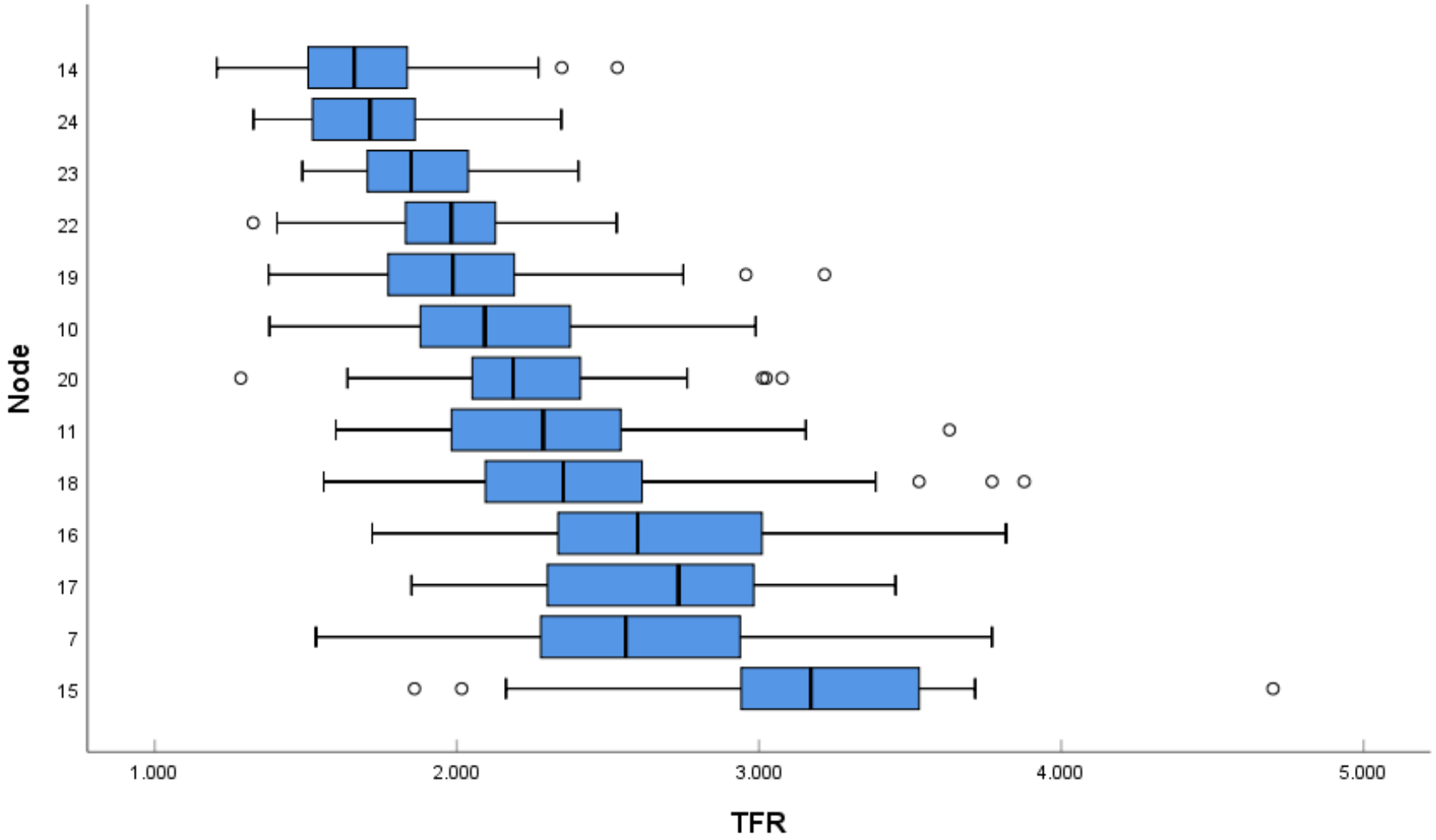

Figure 3: Distribution of districts by TFR in each cluster identified through classification modelling exercise. Clusters have been ordered by the median TFR in the cluster.
Source: Author

It may be seen from figure 3 that within each cluster identified through the classification exercise, TFR varies widely across districts in the clutser and, in some clusters, there are districts with exceptionally low or high districts. The within district variation in TFR in each cluster is a reflection that human development is not the only determinant of the inter-district variation in fertility. There are other factors that are not captured by the three dimensions of human development that influence the level of fertility in a district. Figure 3 indicates that the surface measure of human development (HDS) is not the lowest in that cluster in which average fertility is the highest, although HDS is the highest in that cluster in which fertility is the lowest. Table 3 shows that even at the cluster level fertility is not linearly inversely related to the level of human development.

It may also be seen from table 3 that mean and median TFR in each cluster are not the same which means that districts within the cluster are not statistically normally distributed in terms of TFR. In all but two clsuters, mean TFR is higher than the median TFR which means that within-cluster distribution of districts by TFR is positively skewed in these clusters. By constrast, in cluster 15 and cluster 17, the within-cluster distribution of TFR is negatively skewed as the median TFR in these clausters is higher than the mean TFR. In many clusters there are outlier districts in terms of TFR which influence the mean TFR but not the median TFR of the cluster.

The defining characteristics of human development are different in different clusters. Districts of Node 15, for example, are characterised by low probability of survival in the first five years of life (HE), low secondary school net attendance ratio (ED), and a high level of inequality in progress in the three dimensions of human development (HDE). In districts of cluster 7, HE is low but ED is relatively high and human development inequality is relatively low. On the other hand, in districts of cluster 14 are characterised by high level of probability of survival in the first five years of life (HE), high level of secondary school enrolment ratio which equals one in some districts, and high level of individual standard of living as measured in terms of SL. Average fertility is the lowest in this cluster but TFR varies widely from 1.206 in district South Goa in Goa to 2.531 in district Malapuram in Kerala. In district Malapuram, the probability of survival in the first five years of life is very high (0.995), almost 97 per cent of the households in the district have wealth index at least second quintile of the inter-household distribution of wealth index and secondary school net attendance rate is 100 per cent which means that the district is at a very advanced stage of human development. However, TFR in the district appears to be very high, more than 2.5 which implies that fertility in the district is influenced by factors other than human development. In district South Goa of Goa, all the three indicators, the probability of survival in the first five years of life, secondary school net attendance ratio, and proportion of households having wealth index at least second quintile of the inter-household distribution of wealth index, are lower than the corresponding indicators in district Malapuram but TFR in district South Goa is less than half of the TFR in districts Malapuram. Similarly, the average TFR is the highest in Node 15 but in the districts of this cluster, TFR varies from just 1.860 in district Bijapur in Chhattisgarh to 4.701 in district West Khasi Hills of Meghalaya. In district Bijapur, the probability of survival in the first five years of life is only 0.917, the secondary school net attendance ratio is just 0.552 which less than 15 per cent households in the district has wealth index at least second quintile of the inter-household distribution of wealth index which means that human development is very low in the district. However, despite very low level of human development, feertility in the district is well below the replacement level. In district West Khasi Hills of Meghalaya, the probability of survival in the first five years of life is better than than in district Bijapur. Similarly, the secondary school net attendance ratio is comparatively better than that in district Bijapur, although, the proportion households in the district having wealth index at least second quintlie of the inter-household distribution of wealth index is lower than that in district Bijapur. The TFR in district West Khasi Hills is however more than two times higher than the TFR in district Bijapur. Obviously, the human development effect of fertility at the district level is, at best limited. Other factors than individual capacity, individual knowledge and individual standard of living have more dominating influence on fertility at the district level.

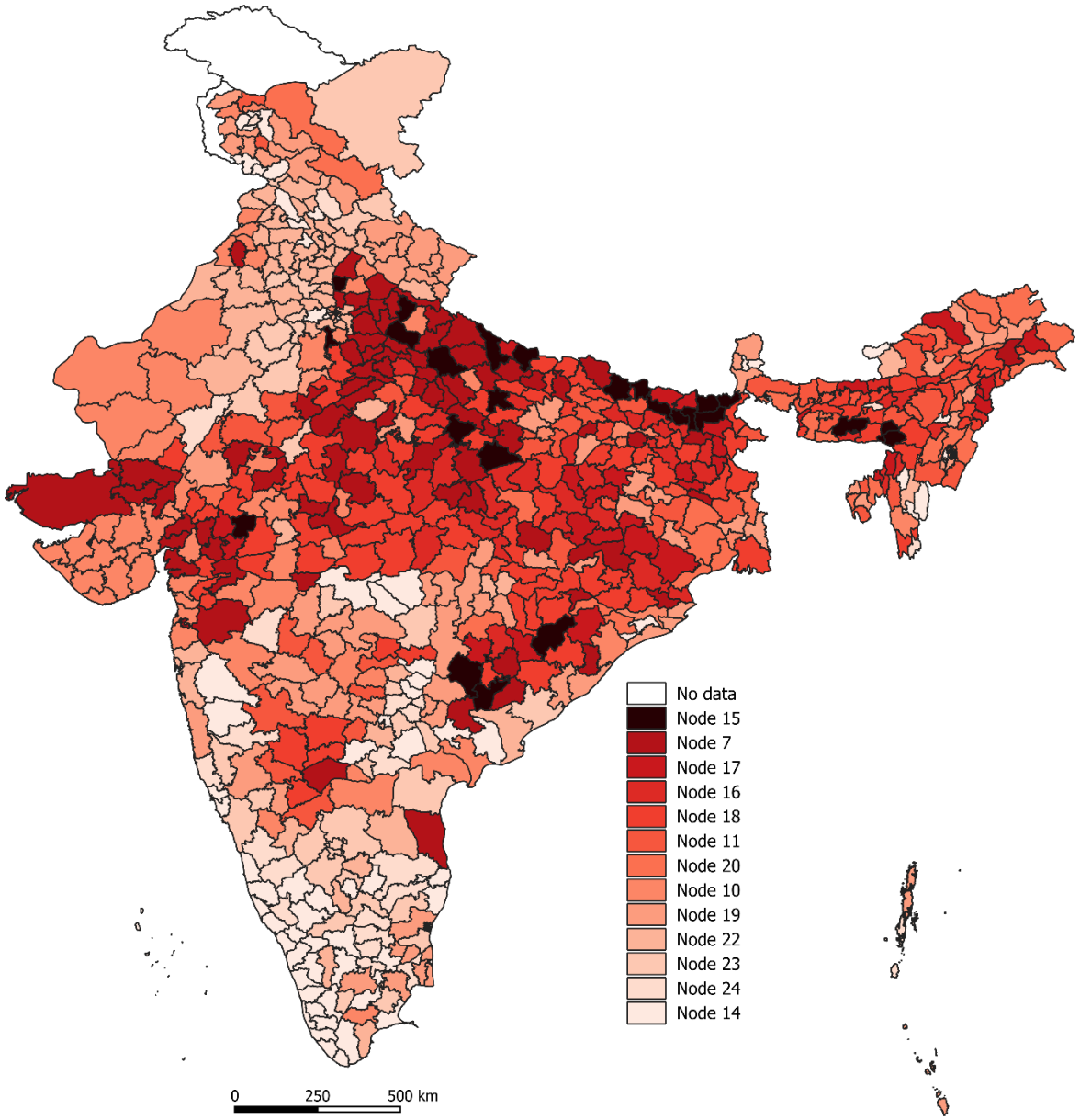

Figure 4: Fertility and human development in 707 districts of India, 2019-2021.
Source: Author.

The appendix table to this chapter gives the cluster membership of each of the 707 districts of the country along with the values of HE, ED, and SL, HDP, HDE and TFR. Districts in different clusters (Nodes) are not evenly distributed across the country as may be seen from figure 4. Districts belonging to Node 14 are primarily located in the southern part of the country whereas districts belonging to Node 15 and Node 7 are mainly located in the central and eastern part of the country (Table 4). All districts of Goa and Kerala are classified in Node 14 whereas there is no district in 13 states/Union Territories which is classified in this Node. On the other hand, out of 25 districts in Node 15, 19 are in only three states – Uttar Pradesh (8), Bihar (8), and Meghalaya (3). Similarly, out of 79 districts in Node 7, 55 are in only three states – Uttar Pradesh (33), Madhya Pradesh (14), and Gujarat (8). There is no district in 18 states and Union Territories which is classified in either Node 15 or Node 7.

Table 4: Distribution of districts belonging to different Nodes across states and Union Territories of the country,

India/State/Union Territory	Nodes													Total
	15	7	17	16	18	11	20	10	19	22	23	24	14	
Aandaman & Nicobar Islands	0	0	0	0	0	0	0	0	2	0	0	1	0	3
Andhra Pradesh	0	1	0	0	0	0	0	3	2	2	3	1	1	13
Arunachal Pradesh	0	0	2	0	4	2	6	0	4	1	0	0	1	20
Assam	0	1	4	5	12	8	2	0	0	0	0	1	0	33
Bihar	8	4	3	9	8	3	1	1	1	0	0	0	0	38
Chandigarh	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Chhattisgarh	2	2	2	4	6	2	2	0	5	2	0	0	0	27
Delhi	0	0	0	0	0	0	0	1	0	6	0	0	4	11
Dadra & Nagar Haveli and Daman & Diu	0	1	0	0	0	0	0	2	0	0	0	0	0	3
Goa	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Gujarat	0	8	1	0	5	0	0	19	0	0	0	0	0	33
Haryana	1	0	0	0	0	0	0	1	0	15	4	0	1	22
Himachal Pradesh	0	0	0	0	0	0	1	0	2	5	2	1	1	12
Jammu & Kashmir	0	0	0	0	0	2	0	2	8	0	0	1	7	20
Jharkhand	0	0	10	4	1	4	1	0	4	0	0	0	0	24
Karnataka	0	1	0	0	4	2	0	1	3	3	6	3	7	30
Kerala	0	0	0	0	0	0	0	0	0	0	0	0	14	14
Ladakh	0	0	0	0	0	0	1	0	0	0	1	0	0	2
Lakshadweep	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Madhya Pradesh	2	14	1	8	16	2	0	6	0	2	0	0	0	51
Maharasthra	0	2	0	0	0	3	0	4	11	3	3	4	6	36
Manipur	0	0	0	0	0	2	3	0	3	0	0	0	1	9
Meghalaya	3	0	0	1	3	1	3	0	0	0	0	0	0	11
Mizoram	0	0	0	0	1	1	0	1	0	1	0	1	3	8
Nagaland	0	0	3	2	2	0	1	0	2	0	0	0	1	11
Odisha	1	5	3	2	9	0	3	2	4	0	0	0	1	30
Puducherry	0	0	0	0	0	0	0	1	0	0	0	0	3	4
Punjab	0	1	0	0	0	0	0	5	0	12	1	0	3	22
Rajasthan	0	3	0	0	7	4	1	6	2	4	5	1	0	33
Sikkim	0	0	0	0	0	0	0	0	2	0	0	0	2	4
Tamil Nadu	0	0	0	0	0	0	0	1	6	2	5	7	11	32
Telangana	0	1	0	0	2	3	0	2	5	3	4	4	7	31
Tripura	0	0	1	1	0	2	2	0	2	0	0	0	0	8
Uttar Pradesh	8	33	1	4	13	7	0	4	3	2	0	0	0	75
Uttarakhand	0	1	0	0	0	0	0	1	8	2	0	0	1	13
West Bengal	0	1	0	0	5	4	5	1	3	0	0	0	1	20
India	25	79	31	40	98	52	32	64	82	65	34	25	80	707

Source: Author

Conclusions

The analysis presented in this chapter suggests that inter-district variation in human development, as reflected in terms of individual capacity, individual knowledge, and individual standard of living, only partly explains inter-district variation in fertility, as measured in terms of TFR, in India. The

progress in human development appears to be directly associated with fertility transition across the districts of the country but the association is not strong. There are factors other than individual capacity, individual knowledge, and individual standard of living which appear to have more dominating effect on fertility at the district level. The contribution of the enhancement in individual capacity, increase in individual knowledge and improvement in the standard of living to fertility transition is influenced by what are known as the proximate determinants of fertility (Davis and Bruce, 1956; Bongaarts, 1972) which are also influenced by a range of social and cultural factors which are not captured through the simple human development framework. The district level analysis presented here suggests that because of these factors, fertility in a district may be high even though the district has an advanced level of human development. Similarly, fertility in a district may be low even though the district has a low level of human development. It may, however, be conlcuded that a reduction in inter-district variation in human development in the country may contribute to a reduction in the inter-district variation in fertility.

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Appendix Table:

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
Andaman & Nicobar Islands									
	Nicobars	1.377	0.959	1.000	0.523	E>H>I	0.026	0.803	19
	North & Middle Andaman	1.784	0.993	0.909	0.526	H>E>I	0.024	0.788	19
	South Andaman	1.327	0.979	0.952	0.919	E>I>H	0.000	0.950	24
Andhra Pradesh									
	Srikakulam	1.565	0.979	0.950	0.676	E>H>I	0.007	0.860	19
	Vizianagaram	1.852	0.960	0.941	0.583	E>H>I	0.012	0.813	19
	Visakhapatnam	1.540	0.961	0.870	0.735	E>H>I	0.001	0.852	23
	East Godavari	1.898	0.977	0.876	0.762	H>E>I	0.001	0.869	22
	West Godavari	1.793	0.981	0.871	0.867	H>I>E	0.001	0.905	14
	Krishna	1.650	0.958	0.825	0.755	I>E>H	0.000	0.843	10
	Guntur	1.652	0.976	0.817	0.811	H>I>E	0.002	0.866	10
	Prakasam	1.704	0.953	0.869	0.788	E>I>H	0.002	0.868	23
	Sri Potti Sriramulu Nellore	1.534	0.950	0.772	0.785	I>H>E	0.002	0.833	7
	Y.S.R.	1.985	0.928	0.872	0.864	I>E>H	0.017	0.888	22
	Kurnool	1.936	0.954	0.804	0.649	E>H>I	0.000	0.795	10
	Anantapur	1.774	0.969	0.878	0.711	E>H>I	0.001	0.847	23
	Chittoor	1.631	0.970	0.897	0.768	E>H>I	0.001	0.875	24
Arunachal Pradesh									
	Tawang	2.347	0.999	1.000	0.824	E>H>I	0.004	0.938	14
	West Kameng	1.703	0.973	0.857	0.850	I>H>E	0.000	0.892	22
	East Kameng	2.527	0.956	0.857	0.358	E>H>I	0.033	0.681	11
	Papum Pare	2.283	0.998	0.889	0.686	H>E>I	0.009	0.850	19
	Upper Subansiri	2.734	0.995	0.800	0.192	H>E>I	0.112	0.574	17
	Upper Siang	2.235	1.000	1.000	0.367	E=H>I	0.073	0.737	20
	Changlang	2.070	1.000	0.929	0.350	H>E>I	0.069	0.709	20
	Lower Subansiri	2.067	0.988	0.857	0.534	H>E>I	0.018	0.774	11
	Dibang Valley	2.013	0.982	1.000	0.412	E>H>I	0.051	0.756	20
	Lower Dibang Valley	2.114	1.000	1.000	0.550	E=H>I	0.031	0.828	19
	Anjaw	1.820	0.982	1.000	0.179	E>H>I	0.146	0.611	20
	East Siang	1.807	1.000	0.875	0.584	H>E>I	0.019	0.805	19
	Kra Daadi	2.294	0.974	1.000	0.443	E>H>I	0.041	0.770	20
	Kurung Kumey	2.347	0.991	0.833	0.239	H>E>I	0.090	0.614	18
	Longding	2.312	1.000	0.750	0.162	H>E>I	0.129	0.539	17
	Lohit	2.213	1.000	0.800	0.553	H>E>I	0.022	0.768	18
	Namsai	2.810	0.985	0.750	0.233	H>E>I	0.078	0.586	18
	Siang	2.506	0.987	1.000	0.279	E>H>I	0.097	0.682	20
	Tirap	2.477	0.964	0.800	0.394	H>E>I	0.024	0.685	18
	West Siang	2.150	0.977	0.875	0.540	H>E>I	0.014	0.779	19
Assam									
	Kokrajhar	1.953	0.961	0.866	0.308	E>H>I	0.048	0.658	11
	Goalpara	2.199	0.969	0.800	0.251	H>E>I	0.063	0.607	18
	Barpeta	2.475	0.972	0.840	0.252	H>E>I	0.070	0.619	18
	Morigaon	2.431	0.948	0.784	0.214	E>H>I	0.058	0.574	16
	Lakhimpur	1.889	0.976	0.840	0.283	H>E>I	0.062	0.640	18
	Dhemaji	2.372	0.976	0.913	0.181	E>H>I	0.120	0.591	20
	Tinsukia	1.715	0.937	0.781	0.354	E>H>I	0.018	0.653	7

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Dibrugarh	2.095	0.977	0.736	0.413	H>E>I	0.026	0.678	18
	Golaghat	2.193	0.971	0.785	0.261	H>E>I	0.059	0.609	18
	Dima Hasao	2.142	0.991	0.826	0.392	H>E>I	0.042	0.699	18
	Cachar	2.420	0.975	0.754	0.259	H>E>I	0.059	0.601	18
	Karimganj	2.474	0.954	0.741	0.216	H>E>I	0.055	0.565	17
	Hailakandi	2.428	0.898	0.768	0.203	E>H>I	0.042	0.551	16
	Bongaigaon	2.060	0.976	0.865	0.349	H>E>I	0.046	0.684	11
	Chirang	2.033	0.963	0.852	0.230	E>H>I	0.074	0.607	11
	Kamrup	1.968	0.982	0.831	0.411	H>E>I	0.033	0.707	18
	Kamrup Metropolitan	1.411	0.972	0.884	0.776	E>H>I	0.000	0.874	24
	Nalbari	1.773	0.987	0.847	0.329	H>E>I	0.057	0.671	11
	Baksa	1.850	0.971	0.840	0.190	H>E>I	0.097	0.578	17
	Darrang	2.457	0.974	0.788	0.232	H>E>I	0.072	0.593	18
	Udalguri	2.159	0.949	0.804	0.218	E>H>I	0.060	0.583	16
	Biswanath	2.201	0.929	0.808	0.251	E>H>I	0.041	0.600	16
	Charaideo	1.954	0.951	0.709	0.246	H>E>I	0.040	0.574	18
	Dhubri	2.763	0.962	0.802	0.214	H>E>I	0.072	0.582	17
	West Karbi Anglong	2.217	0.969	0.865	0.121	H>E>I	0.145	0.527	11
	Hojai	2.379	0.971	0.852	0.361	H>E>I	0.039	0.685	11
	Jorhat	1.882	0.943	0.867	0.466	E>H>I	0.015	0.735	11
	Karbi Anglong	2.370	0.968	0.867	0.294	E>H>I	0.057	0.652	11
	Majuli	2.445	0.958	0.895	0.183	E>H>I	0.101	0.583	20
	Nagaon	2.486	0.936	0.735	0.243	E>H>I	0.034	0.576	16
	Sivasagar	1.901	0.979	0.800	0.463	H>E>I	0.021	0.723	18
	Sonitpur	2.474	0.959	0.743	0.320	H>E>I	0.030	0.629	18
	South Salmara Mancachar	3.067	0.981	0.750	0.113	H>E>I	0.141	0.494	17
Bihar									
	Pashchim Champaran	3.256	0.906	0.658	0.220	E>H>I	0.017	0.533	7
	Purba Champaran	3.171	0.941	0.706	0.277	H>E>I	0.025	0.590	15
	Sheohar	3.253	0.936	0.757	0.207	E>H>I	0.048	0.559	16
	Sitamarhi	3.715	0.918	0.702	0.212	E>H>I	0.029	0.543	15
	Madhubani	3.363	0.955	0.740	0.220	H>E>I	0.055	0.567	17
	Supaul	2.959	0.957	0.639	0.081	H>E>I	0.118	0.429	17
	Araria	3.704	0.944	0.639	0.135	H>E>I	0.067	0.476	15
	Kishanganj	3.493	0.945	0.573	0.172	H>E>I	0.049	0.485	15
	Purnia	3.491	0.922	0.612	0.179	H>E>I	0.028	0.496	15
	Katihar	3.324	0.954	0.661	0.155	H>E>I	0.071	0.500	17
	Madhepura	3.532	0.947	0.643	0.101	H>E>I	0.091	0.448	15
	Saharsa	3.539	0.926	0.673	0.153	H>E>I	0.048	0.495	15
	Darbhanga	3.154	0.949	0.714	0.272	H>E>I	0.032	0.591	15
	Muzaffarpur	3.155	0.961	0.851	0.315	E>H>I	0.044	0.657	11
	Gopalganj	3.025	0.959	0.781	0.367	H>E>I	0.024	0.665	18
	Siwan	2.711	0.940	0.852	0.442	E>H>I	0.015	0.717	11
	Saran	2.923	0.940	0.800	0.358	E>H>I	0.020	0.661	16
	Vaishali	3.370	0.928	0.811	0.329	E>H>I	0.024	0.646	16
	Samastipur	3.345	0.942	0.768	0.174	E>H>I	0.067	0.540	16
	Begusarai	3.745	0.950	0.797	0.304	E>H>I	0.035	0.633	16
	Khagaria	3.817	0.950	0.726	0.247	H>E>I	0.041	0.579	16

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Bhagalpur	3.198	0.936	0.825	0.462	E>H>I	0.010	0.718	7
	Banka	3.282	0.960	0.787	0.239	H>E>I	0.058	0.594	18
	Munger	2.804	0.968	0.813	0.516	H>E>I	0.010	0.747	18
	Lakhisarai	3.771	0.962	0.783	0.377	H>E>I	0.024	0.671	18
	Sheikhpura	3.470	0.927	0.829	0.392	E>H>I	0.018	0.683	16
	Nalanda	3.254	0.950	0.745	0.446	H>E>I	0.008	0.690	7
	Patna	2.483	0.955	0.753	0.608	H>E>I	0.001	0.762	10
	Bhojpur	2.919	0.963	0.842	0.456	E>H>I	0.017	0.728	18
	Buxar	3.315	0.940	0.823	0.466	E>H>I	0.010	0.720	7
	Kaimur (Bhabua)	2.701	0.923	0.814	0.300	E>H>I	0.030	0.629	16
	Rohtas	2.956	0.906	0.885	0.518	E>I>H	0.030	0.752	19
	Aurangabad	3.318	0.953	0.842	0.390	E>H>I	0.024	0.693	18
	Gaya	3.529	0.962	0.766	0.328	H>E>I	0.032	0.641	18
	Nawada	3.386	0.971	0.815	0.404	H>E>I	0.027	0.696	18
	Jamui	3.202	0.926	0.751	0.258	E>H>I	0.029	0.588	16
	Jehanabad	3.024	0.952	0.882	0.358	E>H>I	0.035	0.688	20
	Arwal	2.913	0.925	0.855	0.301	E>H>I	0.037	0.641	11
Chandigarh									
	Chandigarh	1.675	0.983	0.873	0.967	I>H>E	0.002	0.940	14
Chhattisgarh									
	Koriya	2.086	0.883	0.890	0.352	E>I>H	0.068	0.668	20
	Jashpur	2.070	0.951	0.795	0.146	E>H>I	0.094	0.528	17
	Raigarh	1.893	0.908	0.854	0.425	E>I>H	0.025	0.701	11
	Korba	2.180	0.923	0.767	0.463	E>H>I	0.006	0.697	7
	Janjgir - Champa	1.872	0.970	0.909	0.460	E>H>I	0.025	0.751	19
	Kabeerdham	2.185	0.975	0.886	0.504	H>E>I	0.018	0.766	19
	Rajnandgaon	1.800	0.947	0.916	0.550	E>H>I	0.012	0.788	19
	Mahasamund	1.753	0.964	0.791	0.404	H>E>I	0.021	0.687	18
	Dhamtari	1.753	0.986	0.908	0.618	H>E>I	0.011	0.825	19
	Narayanpur	2.148	0.962	0.647	0.217	H>E>I	0.053	0.540	17
	Bijapur	1.860	0.917	0.552	0.148	H>E>I	0.028	0.455	15
	Balod	1.560	0.992	0.964	0.573	E>H>I	0.021	0.825	19
	Baloda Bazar	2.250	0.952	0.812	0.467	E>H>I	0.010	0.721	18
	Balrampur	2.466	0.937	0.748	0.146	E>H>I	0.073	0.513	16
	Bastar	2.316	0.925	0.621	0.269	H>E>I	0.013	0.555	7
	Uttar Bastar Kanker	1.868	0.978	0.932	0.342	E>H>I	0.058	0.699	20
	Bemetara	2.351	0.965	0.868	0.527	E>H>I	0.012	0.768	11
	Bilaspur	1.975	0.954	0.813	0.474	E>H>I	0.010	0.725	18
	Dantewada	1.985	0.952	0.721	0.252	H>E>I	0.041	0.581	18
	Durg	1.810	0.979	0.868	0.867	I>H>E	0.001	0.903	22
	Gariyaband	1.855	0.952	0.824	0.348	E>H>I	0.029	0.666	18
	Kodagaon	2.219	0.937	0.737	0.169	E>H>I	0.061	0.527	16
	Mungeli	2.831	0.944	0.830	0.370	E>H>I	0.023	0.677	16
	Raipur	2.036	0.978	0.843	0.757	H>E>I	0.001	0.856	22
	Sukma	2.163	0.929	0.625	0.092	H>E>I	0.073	0.432	15
	Surajpur	2.221	0.966	0.839	0.228	H>E>I	0.074	0.602	18
	Surguja	2.258	0.935	0.807	0.254	E>H>I	0.042	0.603	16
Delhi									

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Central	1.584	0.985	0.885	0.963	I>H>E	0.002	0.944	14
	East	1.831	0.959	0.914	0.961	I>E>H	0.005	0.945	22
	New Delhi	2.291	0.979	0.902	0.960	I>H>E	0.001	0.946	22
	North	2.587	0.969	0.827	0.928	I>H>E	0.004	0.907	10
	North East	2.108	0.970	0.897	0.990	I>E>H	0.004	0.951	22
	North West	2.002	0.984	0.931	0.987	I>E>H	0.001	0.967	14
	Shahdara	1.982	0.951	0.869	0.987	I>E>H	0.010	0.935	22
	South	2.127	0.948	0.932	0.989	I>E>H	0.013	0.956	22
	South East	1.815	0.985	0.927	0.972	I>H>E	0.001	0.961	14
	South West	1.559	0.990	0.934	0.981	I>H>E	0.001	0.968	14
	West	2.101	0.963	0.886	0.969	I>E>H	0.005	0.939	22
Dadra & Nagar Haveli and Daman & Diu									
	Diu	1.991	1.000	0.750	0.955	H>I>E	0.019	0.897	10
	Daman	2.036	0.958	0.800	0.867	I>H>E	0.004	0.873	10
	Dadra & Nagar Haveli	1.935	0.950	0.694	0.520	H>E>I	0.004	0.705	7
Goa									
	North Goa	1.239	1.000	0.965	0.966	H>I>E	0.000	0.977	14
	South Goa	1.206	0.984	0.940	0.971	I>E>H	0.001	0.965	14
Gujarat									
	Kachchh	2.336	0.962	0.613	0.821	I>H>E	0.029	0.789	10
	Banas Kantha	2.756	0.949	0.581	0.479	H>I>E	0.016	0.648	7
	Patan	2.369	0.910	0.641	0.648	I>E>H	0.011	0.725	7
	Mahesana	2.739	0.937	0.692	0.665	I>H>E	0.003	0.757	7
	Gandhinagar	2.255	0.957	0.785	0.816	I>H>E	0.002	0.850	10
	Porbandar	1.926	0.982	0.719	0.896	I>H>E	0.016	0.860	10
	Amreli	2.146	0.980	0.616	0.781	H>I>E	0.034	0.782	10
	Anand	2.229	0.935	0.676	0.697	I>H>E	0.006	0.763	7
	Dohad	2.931	0.973	0.594	0.184	H>E>I	0.076	0.505	17
	Narmada	2.225	0.954	0.667	0.305	H>E>I	0.026	0.596	18
	Bharuch	2.201	0.947	0.673	0.711	I>H>E	0.007	0.770	7
	The Dangs	2.555	0.975	0.571	0.227	H>E>I	0.067	0.526	18
	Navsari	1.679	0.982	0.727	0.729	H>I>E	0.010	0.806	10
	Valsad	1.550	0.977	0.805	0.725	H>I>E	0.003	0.831	10
	Surat	2.039	0.974	0.739	0.870	I>H>E	0.010	0.857	10
	Tapi	1.820	0.959	0.639	0.404	H>E>I	0.018	0.638	18
	Ahmadabad	1.983	0.961	0.733	0.934	I>H>E	0.013	0.872	10
	Aravali	2.613	0.961	0.687	0.458	H>E>I	0.012	0.679	18
	Bhavnagar	2.062	0.980	0.656	0.717	H>I>E	0.021	0.775	10
	Botad	2.549	0.980	0.596	0.810	H>I>E	0.042	0.783	10
	Chhota Udaipur	2.355	0.926	0.549	0.329	H>I>E	0.010	0.563	7
	Devbhumi Dwarka	2.538	0.971	0.450	0.776	H>I>E	0.121	0.707	10
	Gir Somnath	2.013	0.976	0.712	0.751	H>I>E	0.010	0.807	10
	Jamnagar	1.806	0.979	0.713	0.915	I>H>E	0.017	0.863	10
	Junagadh	2.002	0.961	0.724	0.817	I>H>E	0.008	0.830	10
	Kheda	2.195	0.934	0.577	0.555	H>I>E	0.011	0.673	7
	Mahisagar	2.383	0.970	0.664	0.394	H>E>I	0.025	0.644	18
	Morbi	1.811	0.989	0.653	0.868	H>I>E	0.033	0.828	10
	Panch Mahals	2.165	0.939	0.616	0.474	H>I>E	0.006	0.656	7

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Rajkot	2.161	0.980	0.827	0.934	I>H>E	0.004	0.912	10
	Sabar Kantha	2.170	0.968	0.626	0.587	H>I>E	0.018	0.713	10
	Surendranagar	2.363	0.967	0.646	0.721	H>I>E	0.017	0.769	10
	Vadodara	1.877	0.977	0.699	0.831	H>I>E	0.015	0.830	10
Haryana									
	Panchkula	2.190	0.960	0.915	0.968	I>E>H	0.005	0.948	22
	Ambala	1.755	0.932	0.889	0.939	I>E>H	0.019	0.920	22
	Yamunanagar	1.930	0.967	0.880	0.918	I>E>H	0.002	0.921	22
	Kurukshetra	1.958	0.958	0.865	0.914	I>E>H	0.004	0.912	22
	Kaithal	2.289	0.954	0.935	0.914	I>E>H	0.006	0.934	22
	Karnal	2.391	0.972	0.892	0.912	I>E>H	0.001	0.925	22
	Panipat	2.189	0.959	0.926	0.897	I>E>H	0.004	0.927	22
	Sonipat	1.953	0.965	0.937	0.940	I>E>H	0.003	0.947	22
	Jind	2.132	0.944	0.946	0.906	E>I>H	0.012	0.932	23
	Fatehabad	1.815	0.961	0.931	0.885	E>I>H	0.003	0.925	23
	Sirsa	2.182	0.958	0.870	0.879	I>E>H	0.003	0.902	22
	Hisar	2.028	0.971	0.910	0.910	I>E>H	0.001	0.930	22
	Rohtak	1.980	0.975	0.922	0.927	I>E>H	0.001	0.941	22
	Jhajjar	1.933	0.991	0.971	0.954	E>I>H	0.000	0.972	14
	Mahendragarh	2.355	0.965	0.970	0.851	E>I>H	0.004	0.927	23
	Rewari	2.030	0.969	0.936	0.926	I>E>H	0.002	0.944	22
	Gurgaon	2.007	0.966	0.911	0.940	I>E>H	0.003	0.939	22
	Mewat	3.621	0.941	0.526	0.561	H>I>E	0.028	0.658	15
	Faridabad	2.077	0.967	0.873	0.949	I>E>H	0.003	0.929	22
	Palwal	2.989	0.981	0.841	0.805	H>I>E	0.001	0.873	10
	Bhiwani	2.328	0.929	0.928	0.891	I>E>H	0.022	0.916	22
	Charkhi Dadri	2.245	0.967	0.984	0.935	E>I>H	0.004	0.962	23
Himachal Pradesh									
	Chamba	2.166	0.970	0.942	0.673	E>H>I	0.006	0.854	19
	Kangra	1.751	0.955	0.889	0.855	I>E>H	0.003	0.899	22
	Lahul & Spiti	2.111	0.996	1.000	0.481	E>H>I	0.041	0.794	20
	Kullu	1.890	0.984	0.957	0.661	E>H>I	0.009	0.857	19
	Mandi	1.972	0.979	0.947	0.820	E>H>I	0.001	0.913	24
	Hamirpur	2.007	0.972	0.900	0.872	I>E>H	0.000	0.914	22
	Una	2.099	0.980	0.882	0.900	I>H>E	0.001	0.920	22
	Bilaspur	1.998	0.992	0.886	0.899	H>I>E	0.001	0.925	14
	Solan	1.936	0.941	0.900	0.902	I>E>H	0.012	0.914	22
	Sirmaur	2.490	0.980	0.909	0.824	H>E>I	0.000	0.903	22
	Shimla	1.777	0.965	0.942	0.837	E>I>H	0.002	0.913	23
	Kinnaur	2.055	0.968	1.000	0.695	E>H>I	0.009	0.879	23
Jammu & Kashmir									
	Anantnag	2.270	1.000	0.953	0.830	H>E>I	0.003	0.926	14
	Bandipore	1.938	0.969	0.848	0.584	H>E>I	0.006	0.787	11
	Punch	2.137	0.972	0.949	0.581	E>H>I	0.014	0.818	19
	Rajouri	2.196	0.989	0.875	0.621	H>E>I	0.010	0.817	19
	Kishtwar	1.673	0.990	0.906	0.522	H>E>I	0.023	0.785	19
	Doda	1.952	0.981	0.897	0.514	H>E>I	0.020	0.775	19
	Baramula	1.882	0.976	0.805	0.648	H>E>I	0.004	0.801	10

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Srinagar	1.479	0.988	0.979	0.947	E>I>H	0.000	0.971	14
	Jammu	2.102	0.985	0.981	0.952	E>I>H	0.000	0.973	14
	Pulwama	1.752	0.974	0.950	0.869	E>I>H	0.001	0.930	24
	Shupiyan	2.083	1.000	0.909	0.803	H>E>I	0.004	0.901	14
	Badgam	1.841	0.995	0.925	0.773	H>E>I	0.004	0.894	14
	Kupwara	1.964	0.961	0.914	0.581	E>H>I	0.010	0.804	19
	Ganderbal	2.250	0.987	0.839	0.687	H>E>I	0.006	0.831	10
	Ramban	2.272	0.993	0.865	0.370	H>E>I	0.052	0.700	11
	Kulgam	1.868	0.983	0.926	0.542	E>H>I	0.019	0.797	19
	Udhampur	2.228	0.980	0.950	0.606	E>H>I	0.013	0.832	19
	Reasi	2.174	0.986	0.897	0.506	H>E>I	0.023	0.773	19
	Kathua	1.494	0.981	0.961	0.847	E>H>I	0.001	0.928	14
	Samba	1.894	0.991	0.946	0.876	H>E>I	0.000	0.937	14
Jharkhand									
	Garhwa	2.921	0.952	0.827	0.173	E>H>I	0.087	0.557	17
	Chatra	2.806	0.952	0.772	0.196	H>E>I	0.066	0.560	17
	Kodarma	2.645	0.963	0.912	0.399	E>H>I	0.034	0.720	20
	Giridih	2.612	0.956	0.806	0.331	H>E>I	0.032	0.653	18
	Deoghar	2.885	0.967	0.723	0.194	H>E>I	0.073	0.548	17
	Godda	2.726	0.930	0.723	0.213	E>H>I	0.037	0.552	16
	Sahibganj	3.169	0.969	0.648	0.161	H>E>I	0.082	0.504	17
	Pakur	2.590	0.959	0.623	0.117	H>E>I	0.092	0.460	17
	Dhanbad	2.300	0.976	0.847	0.555	H>E>I	0.011	0.777	11
	Bokaro	2.296	0.957	0.873	0.541	E>H>I	0.009	0.774	19
	Lohardaga	2.326	0.959	0.863	0.234	E>H>I	0.071	0.611	11
	Purbi Singhbhum	1.990	0.952	0.871	0.551	E>H>I	0.008	0.776	19
	Palamu	2.679	0.944	0.814	0.235	E>H>I	0.053	0.595	16
	Latehar	2.851	0.963	0.776	0.094	H>E>I	0.141	0.479	17
	Hazaribagh	2.563	0.954	0.883	0.434	E>H>I	0.022	0.727	19
	Ramgarh	2.959	0.959	0.861	0.484	E>H>I	0.014	0.745	11
	Dumka	2.668	0.941	0.785	0.173	E>H>I	0.070	0.544	16
	Jamtara	2.511	0.972	0.794	0.197	H>E>I	0.086	0.571	17
	Ranchi	2.027	0.958	0.891	0.546	E>H>I	0.010	0.782	19
	Khunti	2.217	0.961	0.725	0.112	H>E>I	0.113	0.482	17
	Gumla	2.599	0.933	0.822	0.108	E>H>I	0.111	0.497	16
	Simdega	2.288	0.964	0.813	0.119	H>E>I	0.130	0.511	17
	Pashchimi Singhbhum	2.284	0.955	0.760	0.091	H>E>I	0.131	0.470	17
	Saraikela-Kharsawan	1.965	0.929	0.844	0.298	E>H>I	0.036	0.638	11
Karnataka									
	Belgaum	2.193	0.975	0.907	0.670	E>H>I	0.005	0.843	19
	Bagalkot	2.197	0.972	0.857	0.533	H>E>I	0.012	0.769	11
	Bijapur	2.461	0.981	0.814	0.520	H>E>I	0.015	0.753	18
	Bidar	2.164	0.969	0.882	0.539	E>H>I	0.012	0.779	19
	Raichur	2.348	0.946	0.739	0.497	H>E>I	0.003	0.709	7
	Koppal	1.906	0.957	0.792	0.448	H>E>I	0.013	0.707	18
	Gadag	2.032	0.984	0.901	0.567	H>E>I	0.015	0.801	19
	Dharwad	1.489	0.960	0.927	0.762	E>I>H	0.003	0.880	23
	Uttara Kannada	1.608	0.963	0.892	0.786	E>I>H	0.001	0.878	23

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Haveri	1.790	0.965	0.827	0.582	H>E>I	0.005	0.779	10
	Bellary	1.813	0.932	0.862	0.643	E>I>H	0.007	0.805	11
	Chitradurga	1.693	0.957	0.887	0.700	E>H>I	0.002	0.843	23
	Davanagere	1.703	0.977	0.861	0.743	H>E>I	0.001	0.856	22
	Shimoga	1.476	0.979	0.922	0.833	E>H>I	0.000	0.910	24
	Udupi	1.503	0.985	0.963	0.837	E>H>I	0.001	0.926	14
	Chikmagalur	1.605	0.969	0.940	0.826	E>I>H	0.001	0.910	24
	Tumkur	1.729	0.926	0.991	0.823	E>I>H	0.029	0.911	23
	Bangalore	1.475	0.982	0.949	0.969	I>E>H	0.001	0.966	14
	Mandya	1.618	1.000	0.952	0.864	H>E>I	0.002	0.937	14
	Hassan	1.529	0.990	0.945	0.812	H>E>I	0.002	0.913	14
	Dakshina Kannada	1.768	0.992	0.950	0.903	H>E>I	0.000	0.948	14
	Kodagu	1.653	0.974	0.927	0.868	E>I>H	0.000	0.922	24
	Mysore	1.815	0.987	0.889	0.858	H>I>E	0.001	0.910	14
	Chamarajanagar	1.788	0.966	0.887	0.748	E>H>I	0.001	0.864	23
	Gulbarga	2.109	0.978	0.777	0.554	H>E>I	0.011	0.755	18
	Yadgir	2.196	0.958	0.735	0.458	H>E>I	0.010	0.694	18
	Kolar	1.802	0.988	0.942	0.892	H>E>I	0.000	0.940	14
	Chikkaballapura	1.810	0.978	0.856	0.849	H>I>E	0.001	0.893	22
	Bangalore Rural	1.703	0.969	0.931	0.891	E>I>H	0.001	0.930	23
	Ramanagara	1.641	0.941	0.901	0.901	I>E>H	0.011	0.914	22
Kerala									
	Kasaragod	2.006	0.995	0.974	0.916	H>E>I	0.000	0.961	14
	Kannur	1.733	1.000	0.967	0.968	H>I>E	0.000	0.978	14
	Wayanad	1.995	0.987	0.954	0.815	E>H>I	0.002	0.916	14
	Kozhikode	1.823	1.000	1.000	0.980	E=H>I	0.000	0.993	14
	Malappuram	2.531	0.995	1.000	0.966	E>H>I	0.000	0.987	14
	Palakkad	1.812	1.000	0.988	0.888	H>E>I	0.001	0.958	14
	Thrissur	1.410	1.000	0.984	0.971	H>E>I	0.000	0.985	14
	Ernakulam	1.498	0.989	0.990	0.982	E>I>H	0.000	0.987	14
	Idukki	1.640	0.989	0.967	0.832	E>H>I	0.001	0.927	14
	Kottayam	1.583	1.000	0.970	0.956	H>I>E	0.000	0.975	14
	Alappuzha	1.456	1.000	0.987	0.968	H>E>I	0.000	0.985	14
	Pathanamthitta	1.395	1.000	0.989	0.934	H>E>I	0.000	0.974	14
	Kollam	1.499	1.000	0.993	0.943	H>E>I	0.000	0.978	14
	Thiruvananthapuram	1.469	1.000	0.993	0.925	H>E>I	0.001	0.972	14
Ladakh									
	Leh(Ladakh)	1.934	0.969	0.900	0.742	E>H>I	0.001	0.866	23
	Kargil	2.098	0.975	1.000	0.388	E>H>I	0.054	0.742	20
Lakshadweep									
	Lakshadweep	2.182	1.000	1.000	0.981	E=H>I	0.000	0.993	14
Madhya Pradesh									
	Sheopur	2.502	0.934	0.658	0.323	H>E>I	0.011	0.598	7
	Morena	2.979	0.936	0.782	0.545	E>H>I	0.002	0.741	7
	Bhind	2.741	0.957	0.854	0.573	E>H>I	0.005	0.781	11
	Gwalior	2.402	0.972	0.851	0.828	I>H>E	0.000	0.882	22
	Datia	2.648	0.942	0.802	0.516	E>H>I	0.004	0.736	7
	Shivpuri	2.769	0.935	0.718	0.394	H>E>I	0.007	0.653	7

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Tikamgarh	2.538	0.960	0.798	0.476	H>E>I	0.011	0.722	18
	Chhatarpur	2.344	0.934	0.723	0.413	E>H>I	0.005	0.663	7
	Panna	2.469	0.901	0.725	0.234	E>H>I	0.026	0.559	16
	Sagar	2.925	0.961	0.830	0.421	E>H>I	0.020	0.707	18
	Damoh	2.766	0.941	0.758	0.307	E>H>I	0.025	0.621	16
	Satna	2.716	0.946	0.741	0.391	H>E>I	0.012	0.661	7
	Rewa	3.073	0.928	0.674	0.246	H>E>I	0.022	0.559	15
	Umaria	2.450	0.929	0.723	0.310	E>H>I	0.016	0.610	7
	Neemuch	2.250	0.963	0.823	0.657	H>E>I	0.001	0.807	10
	Mandsaur	2.273	0.940	0.824	0.576	E>H>I	0.003	0.768	7
	Ratlam	2.388	0.953	0.714	0.592	H>I>E	0.002	0.742	10
	Ujjain	2.404	0.976	0.818	0.667	H>E>I	0.003	0.813	10
	Dewas	2.310	0.952	0.802	0.575	E>H>I	0.002	0.764	18
	Dhar	2.031	0.973	0.731	0.478	H>E>I	0.016	0.706	18
	Indore	2.022	0.971	0.849	0.895	I>H>E	0.002	0.904	22
	Khargone (West Nimar)	2.199	0.959	0.708	0.647	H>I>E	0.004	0.763	10
	Barwani	2.471	0.968	0.572	0.371	H>I>E	0.036	0.601	18
	Rajgarh	2.359	0.957	0.794	0.350	H>E>I	0.028	0.659	18
	Vidisha	2.802	0.942	0.684	0.460	H>E>I	0.004	0.674	7
	Bhopal	1.791	0.984	0.799	0.850	H>I>E	0.005	0.875	10
	Sehore	2.913	0.940	0.835	0.495	E>H>I	0.009	0.737	7
	Jhabua	3.529	0.933	0.657	0.181	H>E>I	0.041	0.513	15
	Raisen	2.796	0.955	0.809	0.466	E>H>I	0.011	0.720	18
	Betul	1.952	0.965	0.797	0.391	H>E>I	0.024	0.683	18
	Harda	2.799	0.963	0.779	0.597	H>E>I	0.003	0.769	10
	Hoshangabad	2.680	0.952	0.765	0.531	H>E>I	0.003	0.734	18
	Katni	2.321	0.896	0.730	0.348	E>I>H	0.016	0.624	7
	Jabalpur	1.735	1.000	0.744	0.395	H>E>I	0.046	0.678	18
	Narsimhapur	2.163	0.976	0.735	0.438	H>E>I	0.022	0.689	18
	Dindori	2.554	0.945	0.779	0.146	E>H>I	0.086	0.523	16
	Mandla	2.105	0.956	0.818	0.297	E>H>I	0.042	0.637	18
	Chhindwara	1.813	0.951	0.766	0.462	H>E>I	0.008	0.704	18
	Seoni	2.036	0.950	0.755	0.305	H>E>I	0.029	0.622	16
	Balaghat	1.725	0.955	0.863	0.285	E>H>I	0.052	0.642	11
	Guna	2.797	0.950	0.695	0.428	H>E>I	0.009	0.665	7
	Ashoknagar	2.848	0.957	0.728	0.331	H>E>I	0.026	0.629	18
	Shahdol	1.932	0.909	0.778	0.280	E>H>I	0.027	0.604	16
	Anuppur	2.303	0.947	0.798	0.286	E>H>I	0.037	0.622	16
	Sidhi	2.859	0.931	0.723	0.232	E>H>I	0.033	0.565	16
	Singrauli	3.340	0.938	0.748	0.320	E>H>I	0.020	0.625	16
	Alirajpur	3.210	0.970	0.540	0.171	H>E>I	0.079	0.479	17
	Khandwa (East Nimar)	2.583	0.973	0.803	0.533	H>E>I	0.011	0.753	18
	Burhanpur	2.265	0.946	0.687	0.612	H>I>E	0.002	0.739	7
	Agar Malwa	2.558	0.981	0.787	0.522	H>E>I	0.015	0.745	18
	Shajapur	2.493	0.940	0.802	0.526	E>H>I	0.004	0.740	7
Maharashtra									
	Nandurbar	2.176	0.942	0.703	0.362	H>E>I	0.012	0.634	7
	Dhule	2.406	0.984	0.764	0.594	H>E>I	0.012	0.769	10

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Jalgaon	2.065	0.980	0.823	0.711	H>E>I	0.003	0.833	10
	Buldana	1.881	0.969	0.937	0.667	E>H>I	0.006	0.849	19
	Akola	2.026	0.969	0.883	0.776	E>H>I	0.000	0.873	23
	Washim	2.333	0.959	0.878	0.590	E>H>I	0.006	0.796	19
	Amravati	1.703	0.981	0.915	0.754	H>E>I	0.002	0.879	14
	Wardha	1.622	0.984	0.894	0.836	H>E>I	0.000	0.903	14
	Nagpur	1.636	0.990	0.951	0.932	I>H>E	0.000	0.957	14
	Bhandara	1.785	0.957	0.919	0.677	E>H>I	0.005	0.844	19
	Gondiya	1.786	0.946	0.958	0.607	E>H>I	0.014	0.824	19
	Gadchiroli	1.672	0.964	0.878	0.507	E>H>I	0.014	0.762	19
	Chandrapur	1.841	0.953	0.953	0.760	E>I>H	0.006	0.885	23
	Yavatmal	1.751	0.950	0.882	0.644	E>H>I	0.004	0.817	19
	Nanded	2.232	0.964	0.817	0.597	H>E>I	0.004	0.782	10
	Hingoli	2.123	0.965	0.873	0.608	E>H>I	0.005	0.804	19
	Parbhani	2.262	0.970	0.848	0.559	H>E>I	0.009	0.777	11
	Jalna	2.342	0.960	0.849	0.577	E>H>I	0.005	0.782	11
	Aurangabad	2.095	0.977	0.902	0.740	E>H>I	0.002	0.869	24
	Nashik	2.603	0.948	0.815	0.640	E>H>I	0.001	0.793	7
	Mumbai Suburban	1.326	0.886	0.966	0.979	I>E>H	0.118	0.943	22
	Mumbai	1.476	0.983	0.956	0.968	I>E>H	0.001	0.969	14
	Raigarh	2.202	0.980	0.848	0.814	H>I>E	0.001	0.879	22
	Pune	1.646	1.000	0.850	0.882	H>I>E	0.005	0.909	14
	Ahmadnagar	1.862	0.974	0.895	0.724	E>H>I	0.002	0.859	24
	Bid	2.190	0.980	0.881	0.577	H>E>I	0.011	0.798	19
	Latur	2.512	0.972	0.875	0.686	H>E>I	0.002	0.838	19
	Osmanabad	2.314	0.995	0.910	0.667	H>E>I	0.010	0.848	19
	Solapur	2.744	0.981	0.866	0.661	H>E>I	0.005	0.828	11
	Satara	2.154	1.000	0.883	0.755	H>E>I	0.006	0.875	14
	Ratnagiri	2.187	0.961	0.953	0.586	E>H>I	0.013	0.818	19
	Sindhudurg	1.330	0.977	0.975	0.687	E>H>I	0.008	0.871	24
	Kolhapur	1.795	0.967	0.958	0.817	E>I>H	0.003	0.912	23
	Sangli	1.369	0.971	0.955	0.813	E>I>H	0.002	0.911	24
	Palghar	1.863	0.988	0.793	0.675	H>E>I	0.008	0.811	10
	Thane	1.874	0.979	0.923	0.896	I>E>H	0.000	0.932	22
Manipur									
	Senapati	2.762	0.986	0.917	0.302	H>E>I	0.073	0.674	20
	Tamenglong	2.579	0.950	0.900	0.189	E>H>I	0.093	0.587	20
	Churachandpur	2.012	0.976	0.870	0.422	H>E>I	0.030	0.723	11
	Bishnupur	1.993	0.972	0.917	0.430	E>H>I	0.032	0.740	19
	Thoubal	2.004	0.971	0.894	0.422	E>H>I	0.031	0.728	19
	Imphal West	2.024	0.991	0.933	0.697	H>E>I	0.007	0.867	14
	Imphal East	1.900	0.957	0.907	0.597	E>H>I	0.008	0.808	19
	Ukhrul	3.012	0.966	0.900	0.164	E>H>I	0.119	0.571	20
	Chandel	2.772	0.962	0.857	0.410	E>H>I	0.025	0.710	11
Meghalaya									
	South West Garo Hills	2.071	0.973	0.826	0.301	H>E>I	0.053	0.646	18
	South Garo Hills	3.076	0.994	0.941	0.268	H>E>I	0.097	0.662	20
	North Garo Hills	2.098	0.974	0.923	0.277	E>H>I	0.075	0.658	20

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	East Jantia Hills	2.314	0.947	0.696	0.274	H>E>I	0.029	0.586	15
	East Khasi Hills	3.877	1.000	0.780	0.472	H>E>I	0.033	0.725	18
	Ribhoi	1.867	0.964	0.739	0.261	H>E>I	0.048	0.595	18
	South West Khasi Hills	1.980	0.943	0.813	0.203	E>H>I	0.064	0.573	16
	East Garo Hills	3.630	0.991	0.867	0.330	H>E>I	0.061	0.678	11
	West Garo Hills	2.095	0.993	0.940	0.480	H>E>I	0.034	0.776	20
	West Jaintia Hills	3.474	0.951	0.587	0.236	H>E>I	0.037	0.531	15
	West Khasi Hills	4.701	0.929	0.652	0.112	H>E>I	0.066	0.457	15
Mizoram									
	Mamit	2.224	0.980	0.857	0.655	H>E>I	0.005	0.822	11
	Kolasib	1.767	0.991	0.900	0.820	H>E>I	0.002	0.902	14
	Aizawl	1.677	0.970	0.896	0.935	I>E>H	0.002	0.933	22
	Champhai	1.702	0.990	0.900	0.813	H>E>I	0.002	0.899	14
	Serchhip	1.537	0.981	0.857	0.840	H>I>E	0.001	0.891	14
	Lunglei	1.380	1.000	0.833	0.754	H>I>E	0.008	0.858	10
	Lawngtlai	2.137	0.956	0.750	0.472	H>E>I	0.008	0.704	18
	Saiha	1.657	0.979	1.000	0.707	E>H>I	0.008	0.887	24
Nagaland									
	Mon	2.222	0.982	0.800	0.124	H>E>I	0.142	0.517	17
	Mokokchung	1.884	0.984	0.909	0.534	H>E>I	0.019	0.789	19
	Zunheboto	2.714	0.976	0.800	0.240	H>E>I	0.072	0.602	18
	Wokha	2.223	0.958	1.000	0.467	E>H>I	0.034	0.777	20
	Dimapur	1.830	0.986	0.939	0.794	H>E>I	0.002	0.904	14
	Phek	2.545	0.975	0.833	0.225	H>E>I	0.082	0.601	18
	Tuensang	3.015	0.967	0.739	0.187	H>E>I	0.079	0.548	17
	Longleng	3.006	0.953	0.750	0.130	H>E>I	0.098	0.503	17
	Kiphire	2.598	0.917	0.800	0.159	E>H>I	0.066	0.532	16
	Kohima	1.968	0.984	0.933	0.655	E>H>I	0.008	0.848	19
	Peren	2.457	0.900	0.800	0.345	E>I>H	0.026	0.644	16
Odisha									
	Bargarh	1.652	0.972	0.825	0.370	H>E>I	0.034	0.682	18
	Jharsuguda	1.773	0.940	0.911	0.511	E>H>I	0.016	0.767	19
	Sambalpur	1.559	0.966	0.833	0.380	H>E>I	0.030	0.689	18
	Debagarh	1.810	0.958	0.808	0.247	H>E>I	0.057	0.604	18
	Sundargarh	1.666	0.925	0.780	0.411	E>H>I	0.010	0.677	7
	Kendujhar	2.367	0.945	0.747	0.290	H>E>I	0.029	0.610	16
	Mayurbhanj	1.965	0.953	0.698	0.154	H>E>I	0.074	0.509	17
	Baleshwar	2.137	0.971	0.881	0.362	E>H>I	0.042	0.694	20
	Baudh	1.720	0.949	0.717	0.329	H>E>I	0.021	0.623	16
	Kendrapara	2.060	0.939	0.906	0.430	E>H>I	0.024	0.727	19
	Jagatsinghapur	1.740	0.972	0.884	0.515	E>H>I	0.016	0.770	19
	Cuttack	1.485	0.983	0.786	0.583	H>E>I	0.011	0.771	10
	Jajapur	2.143	0.941	0.798	0.412	E>H>I	0.013	0.687	7
	Dhenkanal	2.155	0.965	0.807	0.383	H>E>I	0.026	0.682	18
	Anugul	1.966	0.985	0.697	0.418	H>E>I	0.031	0.670	18
	Nayagarh	2.174	0.993	0.887	0.452	H>E>I	0.035	0.747	20
	Khordha	1.469	0.989	0.891	0.699	H>E>I	0.005	0.853	14
	Puri	1.720	0.979	0.926	0.570	E>H>I	0.015	0.809	19

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Ganjam	2.271	0.975	0.802	0.639	H>E>I	0.005	0.796	10
	Gajapati	1.983	0.936	0.636	0.283	H>E>I	0.017	0.570	7
	Kandhamal	2.428	0.952	0.745	0.206	H>E>I	0.058	0.559	17
	Bhadrak	2.032	0.957	0.903	0.343	E>H>I	0.043	0.686	20
	Subarnapur	1.820	0.941	0.814	0.433	E>H>I	0.012	0.703	7
	Balangir	1.993	0.959	0.783	0.362	H>E>I	0.025	0.663	18
	Nuapada	2.251	0.952	0.779	0.220	H>E>I	0.058	0.578	18
	Kalahandi	2.016	0.938	0.645	0.247	H>E>I	0.026	0.553	15
	Rayagada	2.278	0.962	0.604	0.260	H>E>I	0.042	0.553	18
	Nabarangapur	2.732	0.957	0.538	0.132	H>E>I	0.077	0.447	17
	Koraput	1.825	0.965	0.635	0.220	H>E>I	0.055	0.539	18
	Malkangiri	2.150	0.889	0.633	0.189	E>H>I	0.017	0.502	7
Puducherry									
	Yanam	1.671	0.959	0.800	0.972	I>H>E	0.009	0.908	10
	Puducherry	1.615	1.000	0.911	0.914	H>I>E	0.002	0.941	14
	Mahe	1.688	1.000	1.000	1.000	H=I=E	0.000	1.000	14
	Karaikal	1.475	0.986	0.893	0.839	H>I>E	0.001	0.904	14
Punjab									
	Kapurthala	1.862	0.969	0.905	0.949	I>E>H	0.002	0.941	22
	Jalandhar	1.968	0.968	0.911	0.985	I>E>H	0.004	0.954	22
	Hoshiarpur	1.852	0.989	0.971	0.964	I>E>H	0.000	0.975	14
	Shahid Bhagat Singh Nagar	1.652	0.997	0.949	0.965	H>I>E	0.000	0.970	14
	Fatehgarh Sahib	1.811	0.985	0.895	0.970	I>H>E	0.002	0.949	14
	Ludhiana	2.236	0.960	0.880	0.955	I>E>H	0.005	0.931	22
	Moga	1.825	0.966	0.843	0.929	I>H>E	0.004	0.911	22
	Muktsar	1.991	0.935	0.840	0.894	I>E>H	0.012	0.889	7
	Faridkot	1.969	0.956	0.783	0.901	I>H>E	0.007	0.877	10
	Bathinda	1.964	0.964	0.787	0.907	I>H>E	0.006	0.884	10
	Mansa	2.043	0.960	0.881	0.878	I>E>H	0.002	0.906	22
	Patiala	1.972	0.967	0.879	0.963	I>E>H	0.004	0.936	22
	Amritsar	1.918	0.975	0.867	0.956	I>H>E	0.003	0.932	22
	Tarn Taran	2.048	0.987	0.820	0.873	H>I>E	0.004	0.891	10
	Rupnagar	1.969	0.975	0.916	0.957	I>E>H	0.002	0.949	22
	Sahibzada Ajit Singh Nagar	1.767	0.937	0.944	0.967	I>E>H	0.020	0.949	22
	Sangrur	1.934	0.920	0.915	0.960	I>E>H	0.035	0.932	22
	Barnala	1.734	0.950	0.914	0.947	I>E>H	0.009	0.937	22
	Fazilka	2.120	0.951	0.809	0.820	I>E>H	0.003	0.858	10
	Firozpur	1.956	0.960	0.805	0.901	I>H>E	0.005	0.887	10
	Gurdaspur	1.778	0.959	0.940	0.937	I>E>H	0.005	0.945	22
	Pathankot	1.872	0.967	0.982	0.962	E>I>H	0.005	0.970	23
Rajasthan									
	Ganganagar	2.011	0.971	0.849	0.778	H>I>E	0.000	0.863	22
	Hanumangarh	2.439	0.975	0.858	0.786	H>I>E	0.000	0.871	22
	Bikaner	2.520	0.977	0.793	0.754	H>I>E	0.003	0.837	10
	Churu	2.518	0.971	0.875	0.700	H>E>I	0.002	0.843	22
	Jhunjhunun	2.180	0.967	0.905	0.835	E>I>H	0.001	0.901	23
	Alwar	2.781	0.960	0.803	0.675	H>E>I	0.000	0.806	10
	Bharatpur	2.958	0.975	0.777	0.568	H>E>I	0.009	0.760	18

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Dhaulpur	3.025	0.947	0.833	0.479	E>H>I	0.010	0.731	7
	Karauli	3.260	0.973	0.838	0.437	H>E>I	0.024	0.720	18
	Sawai Madhopur	2.977	0.928	0.826	0.525	E>I>H	0.008	0.744	7
	Dausa	2.749	0.968	0.915	0.567	E>H>I	0.012	0.801	19
	Jaipur	2.278	0.966	0.925	0.836	E>I>H	0.001	0.908	23
	Sikar	2.402	0.964	0.880	0.804	E>I>H	0.000	0.881	23
	Nagaur	2.312	0.959	0.852	0.780	I>E>H	0.000	0.861	22
	Jodhpur	2.260	0.974	0.793	0.743	H>I>E	0.002	0.832	10
	Jaisalmer	2.618	0.972	0.715	0.637	H>I>E	0.008	0.765	10
	Barmer	2.454	0.992	0.799	0.588	H>E>I	0.014	0.780	10
	Jalor	2.571	0.977	0.806	0.652	H>E>I	0.005	0.803	10
	Sirohi	2.927	0.960	0.759	0.560	H>E>I	0.004	0.746	18
	Pali	2.346	0.976	0.900	0.839	E>H>I	0.000	0.904	24
	Ajmer	2.121	0.939	0.886	0.821	E>I>H	0.009	0.881	23
	Tonk	2.558	0.953	0.851	0.532	E>H>I	0.008	0.762	11
	Bundi	2.467	0.945	0.854	0.513	E>H>I	0.009	0.752	11
	Bhilwara	2.709	0.960	0.862	0.605	E>H>I	0.004	0.798	11
	Rajsamand	2.137	0.969	0.862	0.652	H>E>I	0.003	0.820	11
	Dungarpur	2.340	0.988	0.886	0.361	H>E>I	0.053	0.699	20
	Banswara	2.266	0.952	0.774	0.282	H>E>I	0.038	0.615	18
	Chittaurgarh	2.358	0.939	0.802	0.592	E>H>I	0.002	0.767	7
	Kota	2.026	0.956	0.902	0.835	E>I>H	0.003	0.897	23
	Baran	2.264	0.959	0.836	0.544	E>H>I	0.007	0.764	18
	Jhalawar	2.314	0.952	0.811	0.441	E>H>I	0.013	0.708	18
	Udaipur	2.430	0.980	0.908	0.507	H>E>I	0.022	0.776	19
	Pratapgarh	2.631	0.953	0.810	0.286	E>H>I	0.042	0.628	18
Sikkim									
	North District	1.604	0.955	1.000	0.667	E>H>I	0.013	0.864	19
	West District	1.474	0.985	1.000	0.635	E>H>I	0.015	0.860	19
	South District	1.392	1.000	0.917	0.739	H>E>I	0.007	0.880	14
	East District	1.418	0.992	0.900	0.869	H>I>E	0.001	0.919	14
Tamil Nadu									
	Thiruvallur	1.685	0.981	0.931	0.908	I>E>H	0.000	0.940	14
	Chennai	1.400	1.000	0.974	0.976	H>I>E	0.000	0.983	14
	Kancheepuram	1.719	0.988	0.889	0.862	H>I>E	0.001	0.912	14
	Vellore	2.002	0.980	0.976	0.854	E>H>I	0.001	0.935	24
	Tiruvannamalai	1.647	0.958	0.932	0.698	E>H>I	0.005	0.856	23
	Viluppuram	2.103	0.958	0.922	0.644	E>H>I	0.006	0.832	19
	Salem	1.895	0.970	0.944	0.778	E>H>I	0.002	0.894	24
	Namakkal	1.462	0.971	0.938	0.846	E>I>H	0.001	0.917	24
	Erode	1.621	0.994	0.842	0.852	H>I>E	0.004	0.894	14
	The Nilgiris	1.578	0.985	0.974	0.849	E>H>I	0.001	0.935	14
	Dindigul	1.758	0.960	0.907	0.666	E>H>I	0.004	0.837	19
	Karur	1.523	0.978	0.934	0.713	E>H>I	0.004	0.869	24
	Tiruchirappalli	1.669	0.991	0.944	0.739	H>E>I	0.005	0.886	14
	Perambalur	2.027	0.978	0.939	0.734	E>H>I	0.003	0.879	24
	Ariyalur	1.910	0.958	0.937	0.539	E>H>I	0.016	0.792	19
	Cuddalore	1.540	0.955	0.925	0.687	E>H>I	0.005	0.849	23

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Nagapattinam	1.630	0.985	0.901	0.581	H>E>I	0.014	0.807	19
	Thiruvarur	1.725	1.000	0.949	0.616	H>E>I	0.018	0.841	19
	Thanjavur	1.582	0.971	0.946	0.741	E>H>I	0.003	0.882	24
	Pudukkottai	2.005	0.953	0.884	0.560	E>H>I	0.008	0.784	19
	Sivaganga	1.559	0.966	0.923	0.756	E>H>I	0.002	0.878	23
	Madurai	1.513	1.000	0.877	0.876	H>I>E	0.003	0.916	14
	Theni	1.870	0.960	0.940	0.853	E>I>H	0.003	0.917	23
	Virudhunagar	1.557	1.000	0.820	0.763	H>I>E	0.009	0.857	10
	Ramanathapuram	1.723	0.991	0.943	0.751	H>E>I	0.004	0.890	14
	Thoothukkudi	1.900	0.973	0.907	0.871	I>E>H	0.000	0.916	22
	Tirunelveli	1.580	0.993	0.920	0.831	H>E>I	0.001	0.913	14
	Kanniyakumari	1.523	1.000	0.953	0.938	H>I>E	0.001	0.963	14
	Dharmapuri	1.712	0.972	0.965	0.759	E>H>I	0.004	0.894	24
	Krishnagiri	2.038	0.968	0.894	0.808	E>I>H	0.000	0.888	23
	Coimbatore	1.405	0.957	0.927	0.896	I>E>H	0.005	0.926	22
	Tiruppur	1.611	0.994	0.917	0.880	H>I>E	0.001	0.929	14
Telangana									
	Bhadradri Kothagudem	1.591	0.939	0.808	0.732	I>E>H	0.003	0.823	7
	Adilabad	2.433	0.971	0.662	0.579	H>I>E	0.014	0.724	18
	Hyderabad	1.782	0.975	0.904	0.981	I>E>H	0.002	0.953	22
	Jagitial	1.757	0.961	0.859	0.803	I>E>H	0.000	0.872	22
	Jangoan	1.821	0.977	0.976	0.812	E>H>I	0.002	0.919	24
	Jayashankar Bhupalapally	1.743	0.948	0.895	0.610	E>H>I	0.007	0.807	19
	Jogulamba Gadwal	2.150	0.978	0.745	0.701	H>I>E	0.007	0.801	10
	Kamareddy	1.766	0.971	0.864	0.576	H>E>I	0.008	0.790	11
	Karimnagar	1.469	0.992	0.891	0.859	H>I>E	0.001	0.912	14
	Khammam	1.643	0.989	0.853	0.815	H>I>E	0.002	0.883	14
	Komaram Bheem Asifabad	1.761	0.966	0.702	0.444	H>E>I	0.015	0.679	18
	Mahabubabad	1.631	0.992	0.902	0.634	H>E>I	0.011	0.832	19
	Mahabubnagar	2.098	0.982	0.887	0.719	H>E>I	0.003	0.857	14
	Mancherial	1.495	1.000	0.923	0.717	H>E>I	0.008	0.874	14
	Medak	1.984	0.954	0.925	0.512	E>H>I	0.017	0.776	19
	Medchal-Malkajgiri	1.866	0.981	0.909	0.963	I>H>E	0.001	0.951	14
	Nagarkurnool	1.809	0.971	0.900	0.724	E>H>I	0.002	0.860	24
	Nalgonda	1.784	0.991	0.963	0.816	E>H>I	0.002	0.921	14
	Nirmal	1.600	0.976	0.849	0.648	H>E>I	0.004	0.816	11
	Nizamabad	1.643	0.991	0.825	0.765	H>I>E	0.005	0.856	10
	Peddapalli	1.563	0.989	0.875	0.831	H>I>E	0.002	0.897	14
	Rajanna Sircilla	1.970	0.955	0.953	0.839	E>I>H	0.005	0.915	23
	Ranga Reddy	1.999	0.942	0.891	0.913	I>E>H	0.011	0.915	22
	Sangareddy	2.298	0.966	0.938	0.620	E>H>I	0.009	0.829	19
	Siddipet	1.827	0.974	0.929	0.775	E>H>I	0.001	0.890	24
	Suryapet	1.857	0.955	0.969	0.790	E>I>H	0.006	0.902	23
	Vikarabad	2.120	0.935	0.857	0.609	E>I>H	0.006	0.791	11
	Wanaparthy	1.930	0.936	0.951	0.767	E>I>H	0.014	0.881	23
	Warangal Rural	1.808	0.992	0.933	0.629	H>E>I	0.013	0.839	19
	Warangal Urban	1.778	0.973	0.917	0.862	E>I>H	0.000	0.916	24
	Yadadri Bhuvanagiri	1.798	0.948	0.938	0.862	E>I>H	0.008	0.915	23

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
Tripura									
	Dhalai	2.277	0.979	0.905	0.217	H>E>I	0.102	0.615	20
	Gomati	1.803	0.933	0.872	0.340	E>H>I	0.033	0.670	19
	Khowai	1.669	0.945	0.857	0.239	E>H>I	0.060	0.610	11
	North Tripura	1.919	0.932	0.833	0.375	E>H>I	0.021	0.677	16
	Sepahijala	2.220	0.964	0.879	0.328	E>H>I	0.047	0.673	20
	South Tripura	1.793	0.953	0.860	0.225	E>H>I	0.070	0.603	11
	Unakoti	2.465	0.958	0.778	0.219	H>E>I	0.062	0.578	17
	West Tripura	1.701	0.970	0.886	0.547	E>H>I	0.012	0.784	19
Uttar Pradesh									
	Saharanpur	2.210	0.938	0.677	0.783	I>H>E	0.011	0.794	7
	Bijnor	2.487	0.950	0.768	0.732	I>H>E	0.001	0.813	7
	Rampur	3.499	0.935	0.562	0.683	I>H>E	0.024	0.715	15
	Jyotiba Phule Nagar	3.044	0.943	0.706	0.709	I>H>E	0.003	0.780	7
	Meerut	2.932	0.943	0.739	0.886	I>H>E	0.011	0.853	7
	Baghpat	2.559	0.951	0.814	0.824	I>E>H	0.003	0.861	7
	Gautam Buddha Nagar	2.201	0.947	0.850	0.929	I>E>H	0.009	0.908	22
	Bulandshahr	2.612	0.939	0.786	0.765	I>E>H	0.004	0.827	7
	Aligarh	2.476	0.924	0.735	0.690	I>E>H	0.006	0.778	7
	Mahamaya Nagar	2.532	0.923	0.778	0.567	E>I>H	0.004	0.745	7
	Mathura	2.999	0.943	0.709	0.729	I>H>E	0.004	0.789	7
	Agra	2.942	0.939	0.718	0.812	I>H>E	0.009	0.819	7
	Firozabad	2.953	0.912	0.768	0.634	E>I>H	0.012	0.765	7
	Mainpuri	2.955	0.889	0.839	0.487	E>I>H	0.044	0.720	16
	Bareilly	2.935	0.961	0.565	0.679	H>I>E	0.034	0.722	10
	Pilibhit	2.621	0.930	0.596	0.472	H>I>E	0.005	0.646	7
	Shahjahanpur	3.670	0.900	0.669	0.481	E>I>H	0.006	0.667	7
	Kheri	2.738	0.904	0.643	0.288	E>H>I	0.006	0.567	7
	Sitapur	2.626	0.917	0.529	0.240	H>E>I	0.012	0.508	7
	Hardoi	3.093	0.931	0.579	0.252	H>E>I	0.018	0.533	15
	Unnao	2.396	0.945	0.659	0.382	H>E>I	0.011	0.631	7
	Lucknow	2.062	0.962	0.794	0.748	H>I>E	0.001	0.831	10
	Farrukhabad	2.969	0.927	0.726	0.524	E>I>H	0.001	0.712	7
	Kannauj	2.961	0.923	0.726	0.382	E>H>I	0.007	0.646	7
	Etawah	2.604	0.941	0.844	0.641	E>I>H	0.003	0.801	11
	Auraiya	2.946	0.931	0.796	0.410	E>H>I	0.012	0.683	7
	Kanpur Dehat	2.500	0.948	0.761	0.379	H>E>I	0.016	0.662	7
	Kanpur Nagar	2.282	0.946	0.827	0.714	E>I>H	0.001	0.825	7
	Jalaun	2.464	0.956	0.785	0.466	H>E>I	0.010	0.712	18
	Jhansi	2.314	0.966	0.872	0.574	E>H>I	0.008	0.790	19
	Lalitpur	3.171	0.929	0.790	0.323	E>H>I	0.022	0.636	16
	Hamirpur	2.501	0.946	0.827	0.393	E>H>I	0.020	0.688	16
	Mahoba	2.433	0.952	0.822	0.386	E>H>I	0.022	0.685	18
	Banda	2.941	0.932	0.669	0.234	H>E>I	0.026	0.551	15
	Chitrakoot	2.491	0.952	0.679	0.261	H>E>I	0.035	0.575	18
	Fatehpur	2.817	0.931	0.687	0.320	H>E>I	0.012	0.605	7
	Pratapgarh	2.816	0.956	0.834	0.430	E>H>I	0.018	0.711	18
	Kaushambi	3.767	0.933	0.677	0.305	H>E>I	0.014	0.594	7

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Prayagraj	3.186	0.935	0.771	0.468	E>H>I	0.005	0.704	7
	Bara Banki	3.025	0.930	0.557	0.333	H>I>E	0.011	0.569	7
	Faizabad	2.333	0.967	0.806	0.482	H>E>I	0.013	0.729	18
	Ambedkar Nagar	2.911	0.963	0.827	0.347	H>E>I	0.035	0.668	18
	Bahraich	3.110	0.936	0.395	0.192	H>I>E	0.082	0.436	15
	Shrawasti	3.452	0.955	0.449	0.195	H>I>E	0.073	0.461	17
	Balrampur	2.912	0.933	0.522	0.325	H>I>E	0.018	0.553	15
	Gonda	2.801	0.951	0.683	0.397	H>E>I	0.012	0.647	7
	Siddharthnagar	3.140	0.986	0.589	0.370	H>I>E	0.050	0.611	18
	Basti	2.318	0.949	0.754	0.457	H>E>I	0.007	0.697	7
	Sant Kabir Nagar	2.330	0.965	0.738	0.369	H>E>I	0.025	0.654	18
	Maharajganj	2.783	0.951	0.763	0.472	H>E>I	0.007	0.708	18
	Gorakhpur	2.612	0.942	0.813	0.550	E>H>I	0.003	0.755	7
	Kushinagar	2.364	0.965	0.746	0.435	H>E>I	0.016	0.689	18
	Deoria	2.124	0.985	0.864	0.570	H>E>I	0.013	0.791	11
	Azamgarh	2.296	0.933	0.875	0.448	E>H>I	0.018	0.725	19
	Mau	2.516	0.970	0.784	0.516	H>E>I	0.010	0.739	18
	Ballia	2.361	0.965	0.842	0.471	H>E>I	0.016	0.735	11
	Jaunpur	2.263	0.976	0.904	0.502	E>H>I	0.021	0.771	19
	Ghazipur	2.667	0.972	0.867	0.403	H>E>I	0.032	0.711	11
	Chandauli	2.447	0.944	0.852	0.468	E>H>I	0.013	0.731	11
	Varanasi	2.298	0.989	0.791	0.679	H>I>E	0.009	0.812	10
	Sant Ravidas Nagar (Bhadohi)	2.564	0.927	0.871	0.488	E>H>I	0.015	0.741	11
	Mirzapur	2.466	0.947	0.851	0.466	E>H>I	0.013	0.730	11
	Sonbhadra	2.569	0.960	0.706	0.254	H>E>I	0.045	0.581	18
	Etah	3.440	0.942	0.747	0.439	H>E>I	0.006	0.685	7
	Kanshiram Nagar	3.771	0.921	0.597	0.463	H>I>E	0.002	0.640	7
	Amethi	3.167	0.885	0.713	0.353	E>I>H	0.023	0.618	15
	Budaun	3.386	0.947	0.499	0.401	H>I>E	0.035	0.584	15
	Ghaziabad	2.529	0.970	0.844	0.968	I>H>E	0.005	0.926	22
	Hapur	2.593	0.930	0.777	0.856	I>E>H	0.013	0.852	7
	Moradabad	2.547	0.933	0.728	0.709	I>E>H	0.004	0.785	7
	Muzaffarnagar	2.479	0.981	0.695	0.822	H>I>E	0.017	0.826	10
	Rae Bareli	2.824	0.954	0.758	0.347	H>E>I	0.024	0.646	18
	Sambhal	2.814	0.931	0.598	0.540	I>H>E	0.006	0.674	7
	Shamli	2.582	0.944	0.594	0.779	I>H>E	0.026	0.762	15
	Sultanpur	3.064	0.950	0.817	0.362	E>H>I	0.024	0.671	16
Uttarakhand									
	Uttarkashi	2.125	0.952	0.972	0.604	E>H>I	0.014	0.829	19
	Chamoli	1.934	0.942	0.980	0.659	E>I>H	0.015	0.851	19
	Rudraprayag	2.317	0.969	0.964	0.654	E>H>I	0.009	0.852	19
	Tehri Garhwal	2.243	0.987	0.986	0.698	E>H>I	0.009	0.882	14
	Dehradun	1.928	0.967	0.892	0.950	I>E>H	0.003	0.936	22
	Garhwal	3.217	0.980	0.979	0.652	E>H>I	0.011	0.859	19
	Pithoragarh	2.106	0.939	0.971	0.624	E>I>H	0.017	0.833	19
	Bageshwar	2.020	0.983	0.969	0.564	E>H>I	0.020	0.820	19
	Almora	1.672	0.979	0.974	0.481	E>H>I	0.032	0.782	19
	Champawat	2.616	0.956	0.950	0.562	E>H>I	0.015	0.806	19

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	Nainital	2.021	0.979	0.865	0.793	H>I>E	0.001	0.876	22
	Udham Singh Nagar	2.541	0.940	0.795	0.803	I>E>H	0.005	0.844	7
	Hardwar	2.227	1.000	0.656	0.812	H>I>E	0.035	0.814	10
West Bengal									
	Dakshin Dinajpur	1.681	0.986	0.850	0.252	H>E>I	0.082	0.625	11
	Hugli	2.288	0.976	0.880	0.536	H>E>I	0.015	0.779	19
	Jalpaiguri	2.334	0.966	0.852	0.405	H>E>I	0.027	0.707	11
	Uttar Dinajpur	2.537	0.961	0.783	0.239	H>E>I	0.058	0.593	18
	Birbhum	1.954	0.974	0.770	0.287	H>E>I	0.051	0.622	18
	Maldah	2.357	0.970	0.799	0.306	H>E>I	0.046	0.640	18
	Murshidabad	2.138	0.955	0.826	0.287	E>H>I	0.045	0.633	18
	Bankura	2.198	0.965	0.903	0.238	E>H>I	0.081	0.625	20
	Nadia	1.901	0.977	0.911	0.386	E>H>I	0.043	0.717	20
	North Twenty Four Parganas	1.772	0.990	0.892	0.653	H>E>I	0.009	0.836	19
	Haora	1.444	0.990	0.821	0.655	H>E>I	0.009	0.813	10
	Kolkata	2.040	0.987	0.884	0.882	H>I>E	0.001	0.917	14
	Puruliya	2.464	0.969	0.865	0.227	H>E>I	0.082	0.609	11
	Darjiling	1.507	0.991	0.908	0.589	H>E>I	0.015	0.814	19
	Koch Bihar	1.285	0.956	0.875	0.201	E>H>I	0.086	0.591	20
	South Twenty Four Parganas	2.108	0.973	0.811	0.383	H>E>I	0.031	0.685	18
	Paschim Medinipur	2.010	0.978	0.874	0.210	H>E>I	0.098	0.602	20
	Purba Medinipur	1.639	0.984	0.882	0.209	H>E>I	0.106	0.605	20
	Paschim Barddhaman	1.867	0.945	0.809	0.636	E>I>H	0.001	0.789	7
	Purba Barddhaman	2.000	0.975	0.866	0.377	H>E>I	0.038	0.699	11

Source: Author