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Human Development Effects of Fertility in Districts of India

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Abstract

This paper analyses the relationship between human development and fertility across 707 districts in India using the classification and regression tree technique. The analysis reveals a statistically significant negative relationship between human development and total fertility rate (TFR), suggesting a positive role of human development in fertility transition, but inter-district variation in human development explains only a part of inter-district variation in TFR. The analysis suggests that there are factors beyond human development that influences the level of fertility in a district. The analysis also reveals regional variation in fertility and human development relationship. The southern region of the country shows advanced human development and lower fertility, while northern and eastern regions exhibit higher fertility with varying human development levels. The study also finds substantial intra-cluster and inter-district variation, emphasising the impact of unobserved factors on the variation in fertility across districts.

Introduction

The available evidence highlights 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 districts. Similarly, the progress towards human development varies widely across districts (Chaurasia, 2023a) and, within district (Chaurasia, 2023b). 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 for a decentralised approach for planning and programming to meet the development and welfare needs of the people of the country.

The strong and persistent inter-district variation in both fertility and human development calls for examining the relationship between demographic dynamics and human development at the district level. Such an analysis may provide evidence for integrating demographic factors in planning and programming for human development activities at the local level. This integration ensures that the progress in human

development leads to demographic transition while demographic transition contributes to accelerating human progress. Given the vastness and the diversity of the country India, it is neither feasible nor effective to adopt a universal approach to both fertility transition and human development in all districts. Instead, identifying uniformities or common patterns within this diversity can help to address local level challenges of both fertility transition and human development.

Attempts to explore how human development contributes to fertility transition has a long history (Luci and Thévenon, 2010). The demographic transition theory asserts that progress in the three core dimensions of human development - individual capacity, individual knowledge, and individual standard of living – are related to demographic transition, especially transition in fertility (Bryant, 2007; Notestein, 1945; Davis, 1945). This means fertility and human development are inversely related – the higher the human development the lower the fertility and vice versa. However, fertility and human development relationship is not linear. At low and medium levels, human development appears to promote fertility decline but at advanced levels of human development, the relationship is found to be weak (Wilson and Airey, 1999; Myrskylä et al, 2009; Fox et al, 2019), although the association between fertility and human development remains negative (Myrskylä et al, 2009; Furuoka, 2009; Myrskyläet al, 2011; Esping-Andersen and Billari, 2015; Goldscheider et al, 2015).

In India, both human development and fertility vary widely across the districts. For instance, some districts report fertility below the replacement level, while others still have more than four live births per woman (Chaurasia and Singh,). Similarly, human development varies from an advanced stage to unacceptably low level across districts (Chaurasia,). The variation in fertility and human development across districts offers an opportunity to examine the relationship between fertility and human development in the Indian context.

This paper examines the relationship between fertility and human development in India using district level data from the latest round of the National Family Health Survey (2019-21). The bivariate analysis regresses fertility (measured in terms of total fertility rate or TFR) on the surface measure of human development (HDS) - a composite index of human development capturing progress in individual capacity, knowledge, and standard of living (Chaurasia, 2023a). The multivariate analysis regresses TFR 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 at least the second wealth quintile of wealth index (SL). The classification or segmentation analysis further explores how human development influences fertility across the districts. Together, these analyses deepen understanding of fertility-human development dynamics within India.

Fertility and Human Development

The bivariate relationship between fertility and human development is presented in figure 1 in terms of the scatter plot of inter-district variation in total fertility rate (TFR) and inter-district variation in human development surface (HDS). The Figure suggests that human development and fertility are inversely related – the higher the level of human

development the lower the fertility and vice versa. The relationship, however, is not strong as some districts exhibit high fertility despite advanced level of human development whereas some districts exhibit low or very low fertility despite low level of human development. More specifically, out of 144 districts in the country where human development is well advanced (HDS≥0.900), only 117 districts have TFR below the replacement level (TFR<2.1). In contrast, among 102 districts with either low or very low level of human development (HDS<0.600), the TFR is below the replacement level in 12 districts. The figure suggests that progress in human development contributes to fertility transition, but fertility transition is influenced by other factors also.

The ordinary least square regression of TFR on HDS also confirms the relatively weak relationship between inter-district variation in HDS and inter-district variation in TFR (Table 1). The regression coefficient is statistically significant and negative, reinforcing that human development promotes in fertility transition. However, inter-district variation in HDS explains less than 35 per cent of the inter-district variation in TFR. Notably, the TFR is not necessarily the lowest in the district with highest HDS; nor does the district with the lowest HDS have the highest TFR. The regression analysis confirms that confirms that fertility and human development are negatively associated, but human development is not the only determinant of fertility.

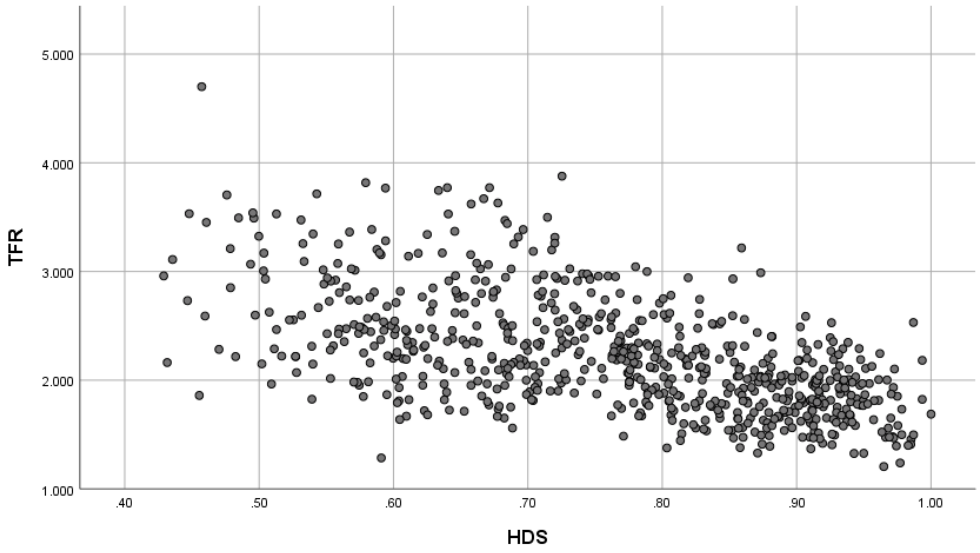

Figure 1: Association between the level of fertility (TFR) and human development (HDS) across 707 districts of India.
Source: Author.

The HDS is the composite measure of human development that encapsulates the probability of survival in the first five years of life (HE) reflecting individual capacity, secondary school net attendance ratio (ED) representing individual knowledge, and proportion of households having wealth index equal to or more than the second quintile of

the inter-household distribution of wealth index (SL) indicating 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 the regression results of TFR on HE, ED, and SL, the three constituents of HDS. The table suggests that inter-district variation in all the three dimensions of human development are statistically significantly and negatively associated with the inter-district variation in TFR. Among them, the individual knowledge dimension of human development has the highest influence on explaining the fertility variation, whereas the impact of individual capacity dimension on fertility is the weakest. Despite this, the relationship is not strong as three dimensions (HE, ED, and SL) explain only about 40 per cent of the inter-district variation in TFR, although it is still higher than the variation explained by HDS alone (Table 1).

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

Independent variable	B	Std. Error	β	t	Sig.
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 Adjusted					0.340
N					707

Source: Author

A comparison of Tables 1 and 2 indicates that inter-district variation in fertility is better explained when the three dimensions of human development are treated separately in the regression analysis. The explanatory power of human development in explaining fertility weakens when human development is measured through a composite index such as HDS. The reason is that aggregation of the three dimensions of human development into a single metric of human development results in some loss of information which is expected, as aggregating multiple indicators into a single scalar index often results in some loss of information. Table 2 supports the notion that analysing the relationship between fertility and human development is more revealing when different dimensions of human development are considered as the explanatory variable in the regression analysis rather than combining them into a single composite index. Treating the three dimensions of human development as separate explanatory variables also helps classifying districts in terms of human development and then examining how fertility varies across different clusters of districts.

Table 2: Results of the regression of TFR on HE, ED, and SL based on district level data, 2019-2021.

Independent variables	B	Std. Error	β	t	Sig.
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

Classification of Districts

The regression analysis suggests that fertility in a district is influenced by the progress in the three dimensions of human development – 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 on fertility is found to be relatively the highest whereas the influence of the individual capacity is found to be relatively the lowest. This means that the defining characteristics of human development within a district may also influence fertility in the district. Human development may be characterised in terms of the human development profile, which reflects the relative progress and inequality in progress across the three dimensions of human development (Chaurasia, 2023b). Human development can be characterised in eight human development profiles depending upon whether progress is relatively the most advanced in the individual capacity or the individual knowledge or the individual standard of living. Additionally, the inequality in human development or the difference in progress in the three dimensions of human development also varies widely across the districts. Any analysis of the relationship between inter-district variation in fertility and human development, therefore, must consider these characteristics.

To explore how fertility varies among districts with distinct human development characteristics, we have applied the classification modelling approach (Han et al, 2012; Tan et al, 2006). This approach classifies districts into mutually exclusive, yet exhaustive groups or clusters based on individual capacity (HE), individual knowledge (ED), individual standard of living (SL), human development profile (HDP) and human development inequality (HDE). There are various methods of classification available for the purpose. These include, among others, support vector machine (Urso et al, 2019), decision or classification tree (Liu et al, 2016), logistic regression (Leon, 1998), nearest neighbour (Parihari et al, 2023), imbalanced classification (Sun et al, 2009), random forest (Ho, 1998), multiclass classification (Venkatesan, 2016), and neural network (Muratbek and Bektemisova, 2024). The decision or classification tree method is a powerful statistical method that is very effective 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 also robust to outliers. It is easy to interpret and understand and can be used even with heavily skewed data.

Several statistical techniques are available to construct a decision 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, statistical tree (QUEST) (Loh and Shih, 1997). A comparison of these techniques can be found elsewhere (Song and Lu, 2015). This study employs CART technique to classify districts into mutually exclusive and exhaustive groups or clusters that maximize within-group homogeneity in fertility levels. A cluster or a group is termed as “pure,” if the fertility

level is the same for all districts in the cluster or group. If not, then the impurity in the cluster is measured using the Gini index.

One of the advantages of CART is that it can handle both categorical and continuous dependent variables. For a categorical variable, CART produces the classification tree (showing the proportionate distribution of data in different categories for each identified cluster), and for a continuous one, CART generates the regression tree (showing the estimates of arithmetic mean and standard deviation for each identified cluster). In the present case, the dependent variable TFR is a continuous variable. The CART, therefore, has generated the regression tree with estimates of mean fertility and associated standard deviation for each identified cluster.

The independent or the explanatory variables used in the classification modelling exercise represent the defining characteristics of human development in each district. Five indicators characterise human development are: 1) probability of survival in the first five years of life (HE); 2) secondary school net attendance ratio (ED); 3) Proportion of households having at least second quintile of intra-household wealth index distribution (SL); 4) human development profile (HDP); and 5) inequality in progress in the three dimensions of human development (HDE). The human development profile (HDP) and human development inequality (HDE) are derived from indices of individual capacity (H), individual knowledge (E) and individual standard of living (I), constructed from HE, ED, and SL respectively, as described in Chaurasia (2023b). Out of the five independent variables, four are continuous while HDP is a categorical variable. A key advantage of CART is that it can handle both continuous and categorical variables simultaneously.

Results of the classification modelling exercise are presented in the form of classification tree in Figure 2 and summarised in Table 3. 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 of the country were classified into two groups or clusters (Node 1 and Node 2) based on the secondary school net attendance ratio (ED) as follows:

- Node 1 ($ED \leq 0.842$): 337 districts with a mean TFR of 2.507 ± 0.533.
- Node 2 ($ED > 0.842$): 370 districts with a lower mean TFR of 1.972 ± 0.365.

At the second stage, districts of Node 1 and Node 2 were further classified based on HE (the probability of survival in the first five years of life) and SL (the inter-household distribution of wealth index) respectively:

- Node 1 is split into:
  - Node 3 ($HE \leq 0.951$): 144 districts with a mean TFR of 2.712 ± 0.551.
  - Node 4 ($HE > 0.951$): 193 districts with a mean TFR of 2.353 ± 0.465.
- Node 2 is split into:
  - Node 5 ($SL \leq 0.687$): 186 districts with a mean TFR of 2.142 ± 0.386.
  - Node 6 ($SL > 0.687$): 204 districts with the lowest mean TFR of 1.834 ± 0.280.

At the third stage, districts (in Nodes 3, 4, 5 and 6) were further classified based on ED, SL, human development inequality (HDE), and human development profile (HDP). The classification process continued until 13 mutually exclusive and exhaustive clusters (nodes) were formed. Table 3 outlines the human development features of 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).

The average TFR varies across the 13 clusters. Key observations include:

- Highest Mean TFR (3.170 ± 0.621) in Node 15 (25 districts):
  - HE ≤ 0.951, ED ≤ 0.751, and high HDE (>0.018), indicating significant disparities in human development.
- Lowest Mean TFR (1.714 ± 0.258) in Node 14 (80 districts):
  - HE > 0.980, ED > 0.842, SL > 0.687, with fertility remaining low regardless of HDP and HDE.
- Low Mean TFR (1.734 ± 0.280) in Node 24 (25 districts):
  - HE between 0.969–0.980, ED > 0.824, SL > 0.687, with the most progress in education.

The classification model also highlights the role of inequality in human development progress (HDE) and human development profile (HDP) in influencing fertility:

- Node 3 (HE ≤ 0.951, ED ≤ 0.842) further splits into:
  - Node 7 (HDE ≤ 0.018): 79 districts with a mean TFR of 2.657.
  - Node 8 (HDE > 0.018): 65 districts with a higher mean TFR of 2.865.

Districts with lower human development inequal tend to have lower fertility than those with higher inequality. The analysis confirms that education-led human development has the strongest negative association with fertility as compared to health-led or income-led human development. This observation reinforces previous findings that individual knowledge plays a crucial role in fertility transition.

Figure 3 shows the distribution of TFR across districts within each cluster identified through the classification modelling approach. The table illustrates that within each cluster fertility varies widely across the districts of the cluster and in some clusters, the within-cluster variation in fertility across districts is exceptionally high. The within-cluster, across districts, variation in fertility indicates that human development is not the sole determinant of the inter-district variation in fertility. There are other factors that are not captured by the three dimensions of human development which have a strong influence on fertility in the district. Figure 3 shows that the cluster with the lowest average TFR is not the cluster with the highest level of human development. Similarly, cluster with the highest average TFR is not the cluster with the lowest human development. Figure 3 further confirms that even at the cluster level, fertility is not inversely related to human development.

Additionally, Table 3 highlights that mean and median TFR in each cluster are not the same, which indicates that districts within each cluster are not statistically normally distributed in terms of TFR. All clusters (except clusters 15 and 17) exhibit a positively skewed distribution as the mean TFR is higher than the median TFR. It suggests that within these clusters, a few outlier districts with very high fertility rates increase the mean and have no impact on the median TFR of the cluster. This highlights the presence of outliers that influence overall cluster-level trend. In contrast, clusters 15 and 17 - having a negatively skewed distribution - show that more districts have relatively higher fertility levels than other districts within these clusters.

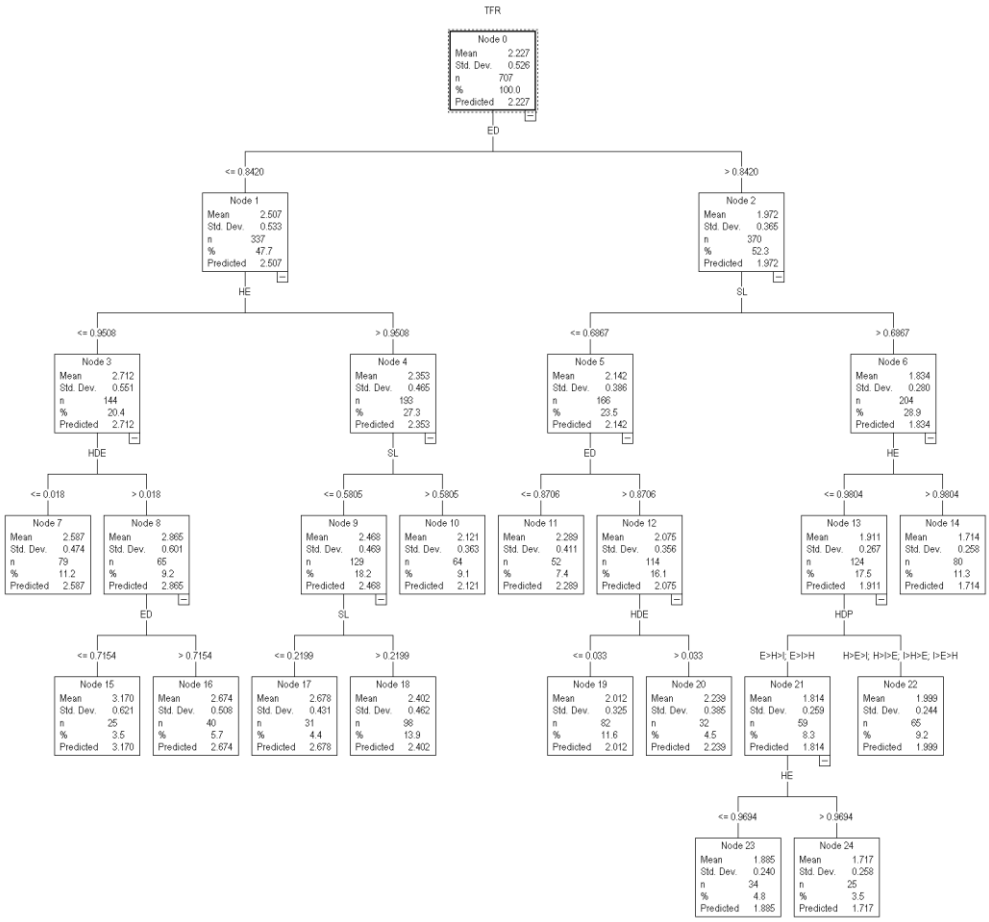

Figure 2: The classification tree showing the classification of districts in terms of level of fertility and characteristics of human development.
Source: Author

Table 3: Mean fertility (TFR) and characteristics of human development in mutually exclusive and exhaustive clusters of districts identified 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.

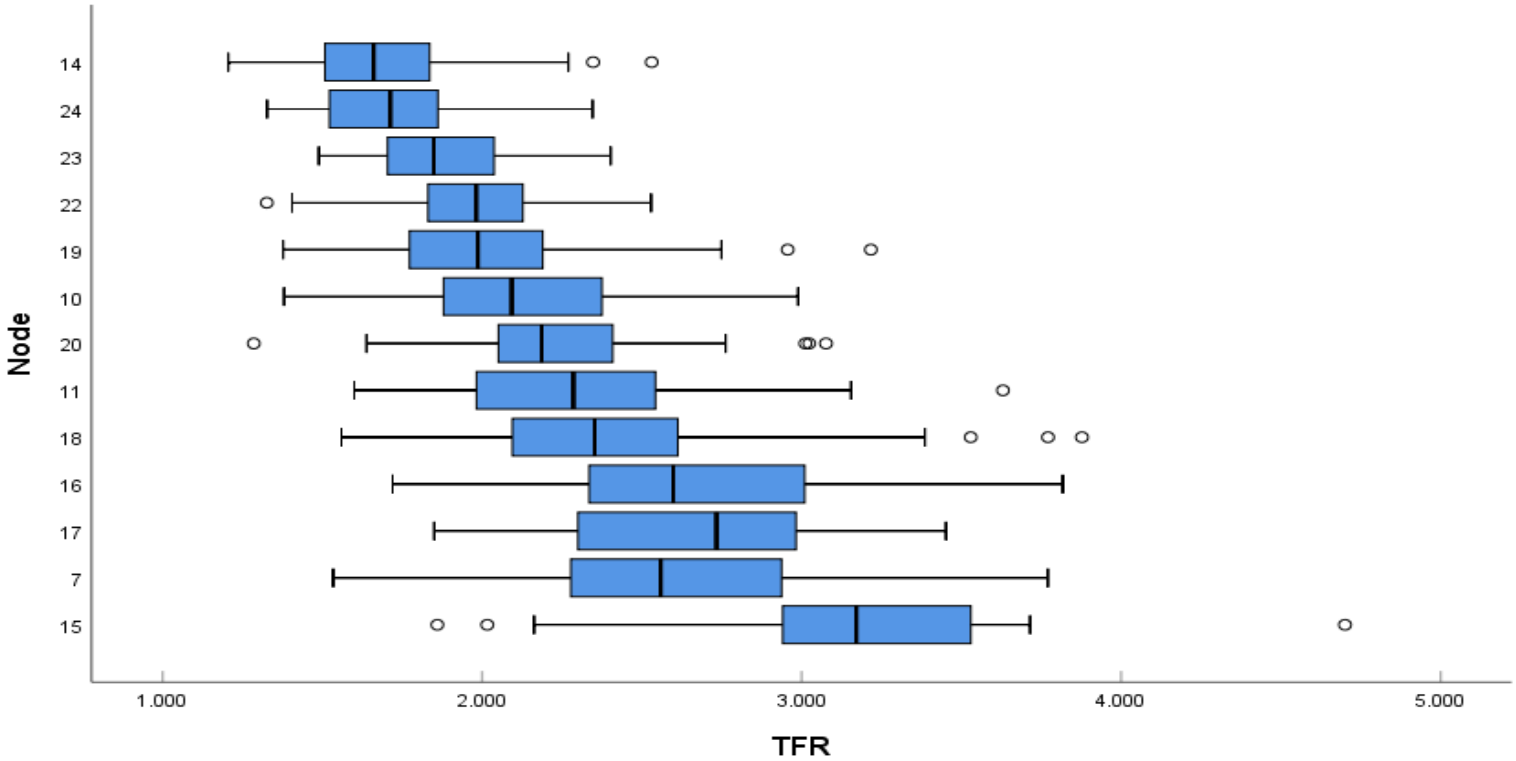

Figure 3: Distribution of districts by TFR in each cluster identified through classification modelling exercise. Clusters have been ordered by the median TFR in the cluster.
Source: Author

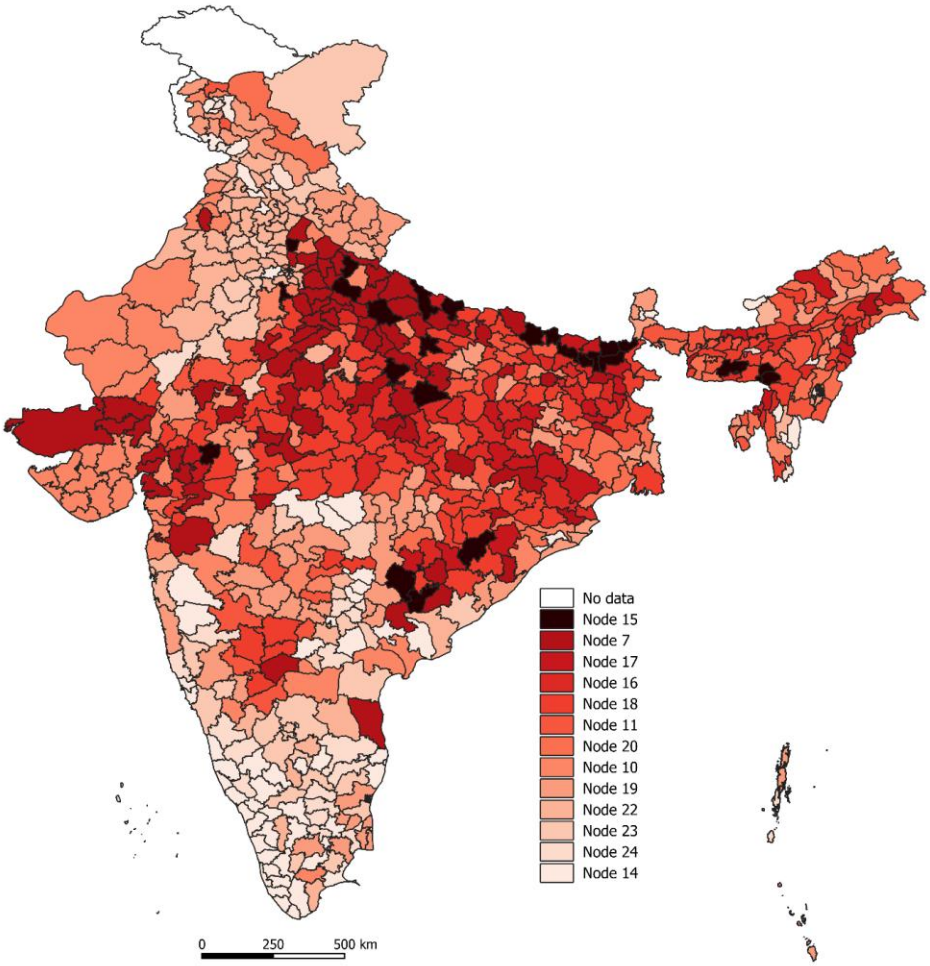

Figure 4: Fertility and human development in 707 districts of India, 2019-2021.
Source: Author.

The defining characteristics of human development also vary across clusters. For instance, districts of Node 15 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 human development inequality (HDE). In contrast, in districts of cluster 7, HE is low, ED is relatively high, but HDE is relatively low. On the other hand, districts of cluster 14 are characterised by high HE, high ED which equals one in some districts, and high level of individual standard of living (SL). This cluster has the lowest fertility, but TFR still varies widely from 1.206 in district South Goa (Goa) to 2.531 in Malappuram (Kerala). Interestingly, in Malappuram district, the probability of survival in the first five years of life is very high (0.995), almost 97 per cent of the households have wealth index at least second quintile of household distribution of wealth index and secondary school net attendance rate is 100 per cent. However, TFR is still very high, and exceeds more than 2.5. Conversely, in South Goa (Goa), all the three indicators - HE, ED, and SL, are lower than the corresponding indicators in Malappuram, yet the TFR in South Goa is less than half of that in Malappuram. It evidently suggests that fertility is influenced by factors beyond human development.

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	
Andaman & 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
Maharashtra	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

Similarly, Node 15 has the highest average TFR, but it varies from just 1.860 in Bijapur (Chhattisgarh) to 4.701 in West Khasi Hills (Meghalaya). Bijapur has a very low human development - HE is only 0.917, ED is just 0.552, and less than 15 per cent households are in or above the second quintile of wealth index, despite this, fertility is well below the replacement level. Conversely, West Khasi Hills shows better HE and ED than Bijapur; however, the proportion of households in at least the second wealth quintile is

lower than in Bijapur. Notably, the TFR in West Khasi Hills is more than twice that of Bijapur. These variations highlight that human development has a limited impact on fertility at the district level. Other sociocultural, economic, and behavioural factors are likely to exert a more significant influence on fertility rates.

The geographical distribution of districts across clusters is also uneven as may be seen from the Figure 4 and table 4. Key findings are as follows:

- Node 14 (high human development, low fertility) is mainly concentrated in southern India, with all districts of Goa and Kerala classified in this Node. Notably, 13 states/UTs have no districts in this category.
- Node 15 (low human development, high fertility) is primarily found in Uttar Pradesh (8), Bihar (8), and Meghalaya (3)—with 19 of its 25 districts concentrated in just these three states.
- Node 7 (moderate human development, mid-range fertility) is heavily concentrated in Uttar Pradesh (33), Madhya Pradesh (14), and Gujarat (8), with 55 of its 79 districts located in these three states.
- 18 states/UTs have no districts classified in either Node 15 or Node 7, further highlighting the regional variations in human development and fertility trends.

The appendix table 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.

Conclusions

The present analysis suggests that inter-district variation in human development, including inter-district variation in the three dimensions of human development, explains, only partly, inter-district in fertility in India, although progress in human development has a negative effect on fertility – the higher the level of human development the lower the fertility on average. The proximate determinants of fertility are well-known (Davis and Bruce, 1956; Bongaarts, 1972). Although, these proximate determinants of fertility are influenced by the level of human development, yet they are also influenced, often strongly, by a range of social and cultural factors which are not captured through the human development framework. For instance, districts like Malappuram in Kerala having very advanced level of human development may still have high fertility because of specific cultural, social, and other conditions or district like Bijapur in Chhattisgarh has low fertility despite of district-specific social, cultural, and other factors despite having low level of human development. The present study empirically illustrates these dynamics effectively by using the classification modelling approach. It emphasizes the need of understanding these nuances for better policy formulations aimed at both promoting human development and hastening fertility transition. Overall, the findings of the present analysis suggest that improving human development contributes substantially to reducing fertility but other factors such as cultural or social norms also play a critical role in deciding fertility at the local level in a country like India where diversity in almost all aspects of life is known for its strength and persistence. A decentralised, district-based approach of understanding the human development and fertility interrelationship is, therefore, crucial for both human development progress and fertility transition.

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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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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									

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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									
	Central	1.584	0.985	0.885	0.963	I>H>E	0.002	0.944	14

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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									

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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
	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

State/ Union Territory	District	TFR	HE	ED	SL	HDP	HDE	HDS	Node
	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