Trans.Inst.Indian Geographers
ISSN 0970-9851

# Evaluating regional development in India: an application of census data

Jaydip De*, Ajanta Bhattacharya and Sharmistha Chatterjee, West Bengal

**Abstract**

*The paper identifies regional disparities as well as rural-urban differences in development across the States and Union Territories (UTs) of India, using a multidimensional index. Adopting the basic standard of living approaches, this study seeks answers to the questions pertaining to the regional disparity in development; dimensions of development and rural-urban dissimilarities in development. The study investigates the regional variation of development using a uniquely formulated Index of Development (IoD). The Census of India, 2011 documents forms the empirical basis for this study. It is revealed that the performance of the States/ UTs follows similar patterns in all dimensions of development, i.e. in general, State/ UT with better performance in one aspect, portray better performance in other aspects of development too. The rural-urban difference is also pronounced. While States like Goa and Kerala performed well; Bihar and Chhattisgarh have performed poorly. This analysis exemplifies the evaluation of development using Census data; therefore, it provides opportunities for researchers to investigate regional development at various spatial scales and in different socio-economic contexts.*

***Keywords:*** *Rural-urban differences, Multidimensional index, Index of Development (IoD)*

## Introduction

Inculcating a mechanism of good governance by alleviating regional disparity is the central thrust of planning initiatives adopted in independent India. It is the key concern for the planning authorities and government institutions to reduce the disparities over the States and the UTs. In order to approach towards balanced and sustainable development, several structured initiatives are adopted from time to time by the union and the provincial governments. The present study involves a comparison between the States and the Union Territories (UTs) using a multidimensional index within the environment of Geographic Information System (GIS).

Quantification of development is required to identify the extent of dissimilarities. So far, indices for evaluating and reporting development are quite popularly used worldwide from international to local scales. These indices are helpful in identifying the growing need for interaction at the regional level in sustainability initiatives (Mascarenhas, Coelho, Subtil, and Ramos, 2010). Quantitative indices are helpful to identify the extent of dissimilarities, deprivation and developmental lacunas. Among the quantitative indices, a monetary index is the common one. But, the monetary indicators of development often only concentrate upon the financial dimensions of development; when other approaches are

largely ignored. But, the multidimensional indices include aspects of human prosperity, nourishment and well-being (Alkire, and Foster, 2009). UNDP also recognised the multidimensionality of human well-being through the Human Development Index (HDI) (United Nations Development Programme, 2005; Baud, Pfeffer, Sridharan, and Nainan, 2009). Harmaakorpi (2006) acknowledged the role of multiple dimensionalities to inculcate realistic arms to the quantification of development. Since development is dependent on multiple facets of society, polity and economy, it is realistic to compute development through a multidimensional index and assist decision making (Iglesias, Suter, Beycan, and Vani, 2017; De, 2019).

The regional development as a concept is multidimensional (Nijkamp, Sigar, and Graaff, 1981; Nijkamp, 1986; Nijkamp, 1991; Vázquez, and Sumner, 2013) incorporating both qualitative and quantitative aspects of human well-being. Over the last few decades, global research literature, planners and bureaucrats have spent considerable time discussing and debating appropriate measures of regional development. Nijkamp (2009) considered regional development as the evolutionary perspective of welfare geography. While dealing with regional development, Coe, Hess, Yeung, Dicken, and Henderson (2004) emphasized dynamic outcomes in the context of regional governance. In a diverse and heterogeneous country like India, poverty and deprivation are concentrated regionally (Ghosh and De, 2005). It is evidently true that the existing administrative mechanism of the country has failed in trickling down the fruits of economic growth up to the grass-root level. Inefficiency to identify proper areas and beneficiaries for investment and capacity building is one major drawback behind it. It is, therefore, crucial to evaluate the actual ground level scenario of development in India. Seers, Nafziger, O'Brien, and Bernstein (1979) emphasized the formulation of development policies depending upon appropriate indicator based measurements.

In this context, the present study is an attempt at formulating a set of new indices to evaluate inter-state differences in development in India based on the Census of India (2011) data. The entire study is organized into two sections: formulation of an Index of Development with multiple dimensions and application of the new index to illustrate the regional variation in India's development.

## Objectives

This study is primarily designed to formulate a new index to measure development using the Census of India database. Previously, a number of indices were developed by academicians, but, the index formulated in this endeavor, solely deals with published information provided by the Census of India. Hence, it is widely applicable for national to village level investigation. The Index of Development containing social, economic, household hygiene and necessities and household amenities dimensions is proposed in this regard. This index is used to identify the present status of development and their rural-urban differences in various States and UTs of India.

## Materials and Methods

The Index of Development and its four constituents of social, economic, household hygiene and necessities and household amenities dimensions are applied to identify and map the development at the level of States and UTs of India. It is important to note

that, as this study is based on 2011 Census data, the then administrative divisions are considered in this study. (Andhra Pradesh and Telangana as single state and Jammu and Kashmir and Ladakh as one state).

### *Subject Selection*

The twenty-eight States and seven UTs of India are selected for the present study. Household-level census data of the States and UTs are taken into account.

### *Data Analysis*

The 2011 Census provides detailed household data on socio-economic status and amenities. In order to compute the Index of Development, twenty parameters (feeder parameters) are selected (Fig. 1) and the information is collected from Primary Census Abstract and House listing and Housing Census (Table HH-14). The feeder parameters are first standardized using the Z score.

- $Zi = (X-\mu) \div \sigma$ *Eq. (1)*

Where

$\mu$ = Mean of the population
$\sigma$ = Standard Deviation of the population
X = Individual observation.

The mean scores of Zi statistics against each dimension are obtained simply by mathematical averaging.

- *Social Dimension* = (S1+S2+S3)÷3 *Eq. (2)*
- *Economic Dimension* = (E1 + E2 + E3 + E4) ÷ 4 *Eq. (3)*
- Household Hygiene and Necessities Dimension = (HN1 + HN2 + HN3 + HN4 + HN5 + HN6 + HN7) ÷ 7 *Eq. (4)*
- Household Amenities Dimension = (HN1+ HN2+HN3+HN4+HN5+HN6)÷6 *Eq. (5)*

These mean Z value of four dimensions are then normalized using dimension index.

*Dimension Index (DI)* = (Actual value – Expected minimum value) ÷ (Expected maximum value – Expected minimum value) *Eq. (6)*

The range of DI varies from 0 to 1. Higher the value, the greater the level of development under a particular dimension and vice versa.

The *Index of Development* is obtained by averaging the normalized values of four dimension indices. Equal weight is assigned to the dimensions.

*Index of Development (IoD) = (Social Dimension + Economic Dimension + Household Hygiene and Necessities Dimension + Household Amenities Dimension) ÷ 4* *Eq. (7)*

The set of parameters used in this study and their combinations to identify spatial dimensions of development is new. The grouping of feeder parameters is done under the normative and the behavioral judgment of the researchers. In this analysis, the higher the values, the greater is the level of development of a particular spatial unit and vice versa. GIS environment, endowed with data overlay and visualization capabilities sets the scenario for spatial mapping.

## Present Scenario

Availability of the basic requirements is not ubiquitous over the space. That creates significant disparities of opportunities among regions. In order to identify the needs of life and livelihood, intra-regional and inter-regional studies are required at the ground-level. Precious household-level information regarding development is available from the Census of India documents. This study deals

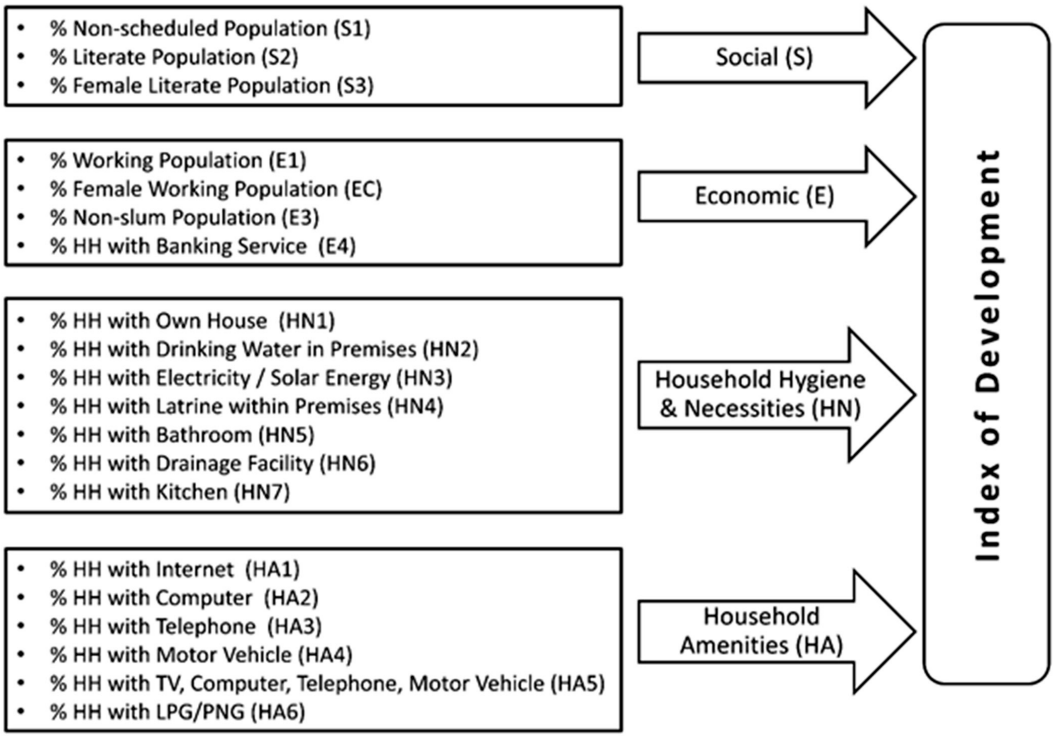


Fig. 1: Feeder Parameters, Dimensions and Subsequent Stages for Formulation of *Index of Development*

with household information about the whole of India. The major findings are identified under four previously mentioned dimensions and the Index of Development.

***Social Dimension***

The *Social Dimension* of development determines the status of social wellbeing of any area. It is largely driven by social position and literacy status. The caste hierarchy determines the inter-personal relation and interaction (Ahmad, 2008) in Indian society, particularly in the countryside. At the same time, literacy provides exposure and opens up the treasury of knowledge (De, 2015), which helps to establish self-esteem. The spread of literacy among women is crucial to obliterate gender differences and promote gender mainstreaming.

The *Social Dimension* of development (Fig. 2) is derived from the standardized values of three feeder parameters (Fig. 1) that reveals better conditions in the urban areas relative to the rural areas. The performance of Kerala is the best for both spatial scales. Traditionally, Kerala recorded the highest literacy over the decades, having a profound impact on the pattern of social development. On the other hand, Bihar, Arunachal Pradesh and Rajasthan lie in the very low category of social development in both the rural and urban categories. The proportion of the scheduled population is relatively high in these States.

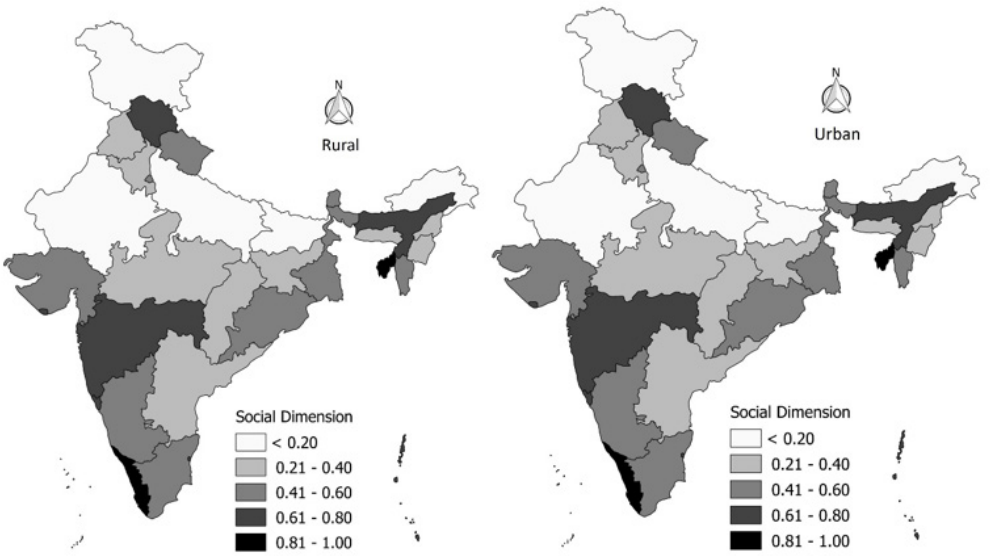


Fig.2: Spatial Variation of the Social Dimension of Development in Rural and Urban Areas

Bihar and Rajasthan have a comparatively low literacy rate, largely in female literacy.

***Economic Dimension***

Economic stability is essential to facilitate structured planning and maintain the pace of development. Participation in the workforce provides long-term stability to a region. Besides, women's participation in the workforce is indicative of woman empowerment and financial self-reliance. Since, in the professional field, women generally face greater hindrances than men (Sen, 2001), woman work participation is a crucial indicator of development. Participation of females in work strengthens the mechanism of capital formation. It also provides social financial stability in the long run. On the other hand, the existence of slums in urban areas signifies a poor economic condition to ensure healthy habitation. Rapid but unplanned growth of the city results in the formation of slums. Slums are in general characterized by poor public infrastructure. Banking service provides financial security for all and promotes the opportunity for wealth generation. Savings and investment facilities are basic to maintain the economic health of any area. In this backdrop, the *Economic Dimension* of development (Fig. 3) is derived from the standardized values of four different feeder parameters (Fig. 1).

Here the number of States/ UTs belonging to both very high and very low category of development is higher. The performance of Himachal Pradesh is most consistent in this respect. The regional economic status and livelihood supporting strategies adopted by local government have some prominent impact on it, as in the case of rural development of Tripura and urban development of Goa.

***Household Hygiene and Necessities Dimension***

Household hygiene and health are largely maintained by the availability of safe and

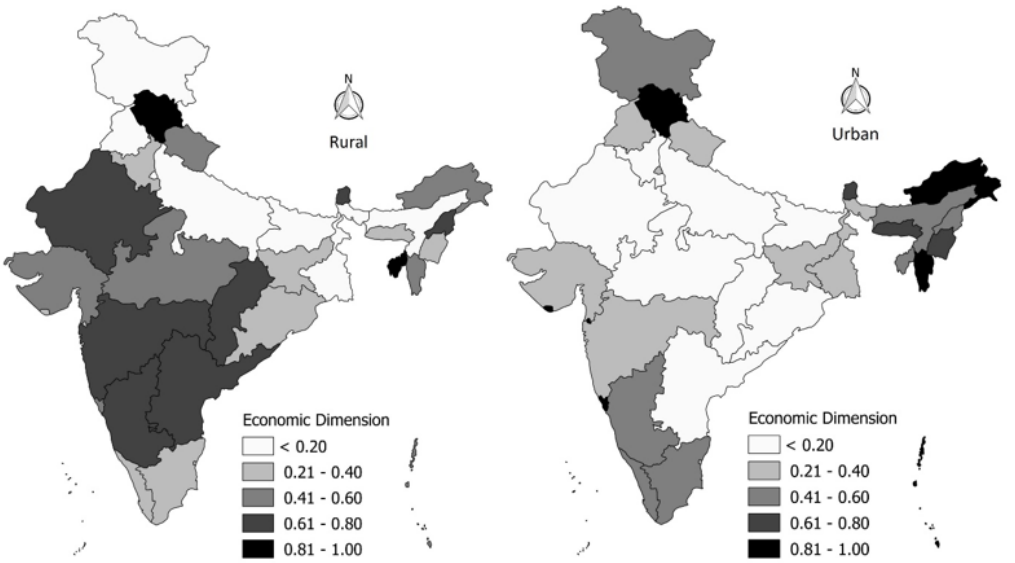


Fig. 3: Spatial Variation of Economic Dimension of Development in Rural and Urban Areas

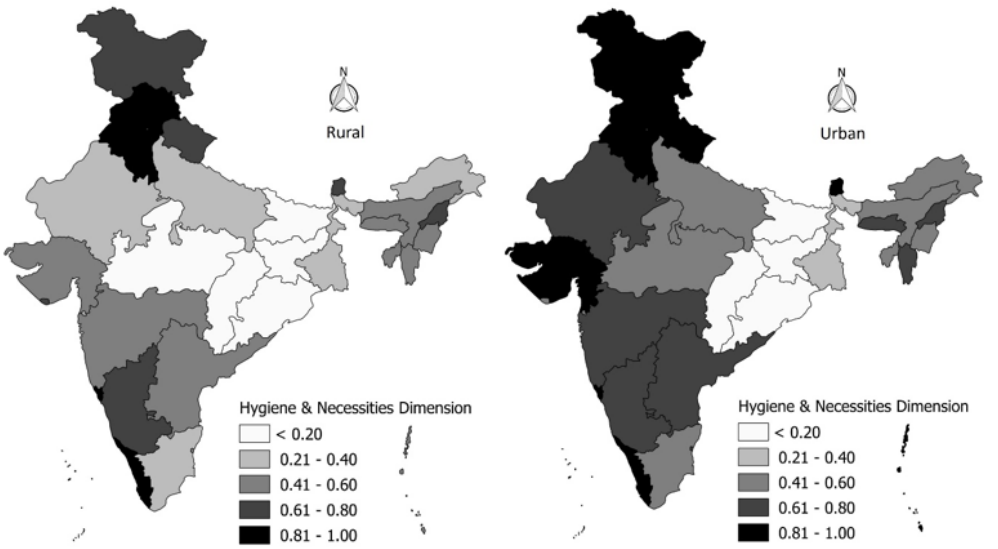


Fig. 4: Spatial Variation of Household Hygiene and Necessities Dimension of Development in Rural and Urban Areas

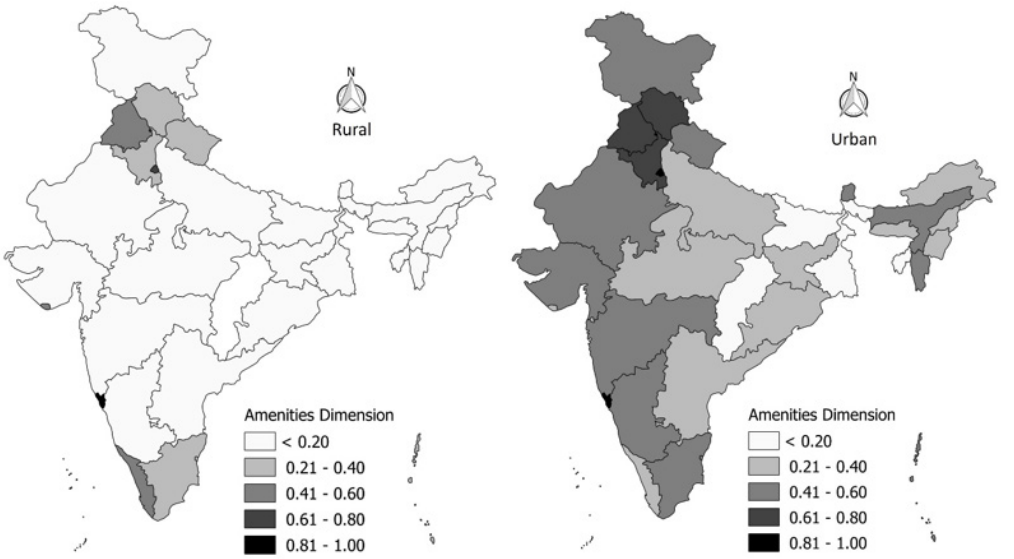


Fig.5: Spatial Variation of Household Amenities Dimension of Development in Rural and Urban Areas

potable drinking water, access to the bathing facility, latrine and proper disposal of wastewater. These, in turn, govern the health of society in the long run. Electricity is an indispensable part of today's civilized society (Zohuri, 2016). Access to electricity is also essential for dignified sustenance. It is an important indicator of balanced development too. Seven feeder parameters (Fig. 1) together build the *Household Hygiene and Necessities Dimension* of development (Fig. 4). The overall situation in urban India is considerably better than rural counterparts. Kerala, Goa, Punjab, Haryana, Himachal Pradesh, Chandigarh and Delhi perform very well for both rural and urban areas. On the contrary, Bihar, Jharkhand, Odisha and Chhattisgarh display very poor performance in both aspects. The level of awareness and public health condition is not up to the mark in this East-Central part of India.

***Household Amenities Dimension***

Advancement of technology made life much faster and endowed with new equipment. While the internet connects a household with the world, a computer is a primary interface to make it possible. Besides, Television and Telecommunication system is making people ready to stay connected with the outside world. Technology is the driver of today's growth and progress. The presence of a motorized vehicle is not only luxury and an indicator of better financial status but in major parts of rural India, these are only means of transport. Access to LPG/PNG connection offers healthy, smoke-free and faster cooking opportunities. These household amenities are therefore of outstanding importance.

In this study, the *Household Amenities Dimension* of development (Fig. 5) is calculated using seven feeder parameters (Fig. 1). As compared to the other dimensions

of development, the condition of India is comparatively poorer, particularly in the countryside. A large portion of rural India covering the Central, Western, Eastern and North-Eastern part is devoid of these facilities. The performance of Goa is the best for both the spatial scales. Regional economic structure and adverse physical conditions are mostly responsible for that. These facilities are not adequately available in the urban areas of Bihar, Chhattisgarh, Tripura and West Bengal too. This clearly indicates that the availability of necessary amenities is not ubiquitous in India.

### *Index of Development (IoD)*

Since the 1990s, household infrastructure as a measure of development has come into the forefront (Baud, Pfeffer, Sridharan, and Nainan, 2009). The *Index of Development* is a collection of different dimensions (Fig. 1), which ultimately provide useful highlights on the spatial character of development across the States and UTs. The IoD is presented as the nexus for policy development by identifying of spatial convergence of the Indian States and UTs. Since the ending decade of the last millennium, there has been a paradigm shift in the approaches of development; from money-centrism to human-centrism (Ghosh, 2006; Saksena, and Deb, 2016). Despite India witnessing high economic growth since the 1980s (Alkire, and Seth, 2015) it could not sufficiently reduce the spatial disparities in holistic development.

In India, the overall status of urban areas is far better than in the countryside (Fig. 6). In the case of rural areas, the Eastern and North-Eastern States consisting of Bihar, Jharkhand, Odisha, West Bengal and Meghalaya along with Madhya Pradesh forms a pocket of less-development (covering 34 percent rural households and 33 percent rural population of India). In contrast, Bihar and Chhattisgarh are less-developed in terms of urban areas (covering four percent urban households and five percent urban

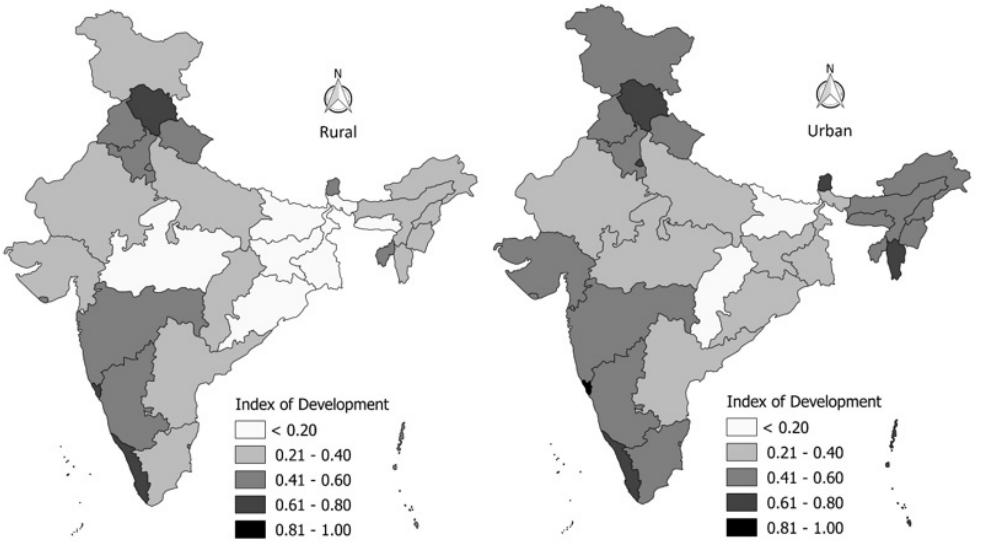


Fig. 6: Spatial Variation of Development in Rural and Urban Areas

populations of India). Hence, Bihar for both rural and urban areas remains less-developed. Andhra Pradesh, Bihar, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Maharashtra, Puducherry, Punjab, Rajasthan, Tripura, Uttar Pradesh and Uttarakhand share the same level of development in both rural and urban areas. In Andhra Pradesh, Arunachal Pradesh, Dadra and Nagar Haveli, Meghalaya, Mizoram, Puducherry, Tamil Nadu and West Bengal the situation of urban areas in all aspects of development is better than the countryside (Table 1). Goa is found to be the most developed state of India. On an average, the Southern and Northern (except Jammu and Kashmir) display relatively a better level of development than the rest of India. But, the central plateau region in spite of having a rich mineral reserve, is less-developed. On the contrary, notwithstanding disadvantageous location from mainland India and poor communication system, the States in the North-East and Andaman and Nicobar Island perform relatively better. The performance of the Trans-Ganga region is comparatively better in both aspects. The condition of urban development in the States and UTs situated along the Arabian Sea is really impressive. The Central Plateau region, the dry Western region and the Rice-Jute-Region of the country are less-developed. Physical hardship, relatively low return from intensive agriculture and industrial stagnation is mainly responsible for that.

### *Regions of Prosperity*

Regions of prosperity can be identified considering the average level of development achieved. The prosperous States/UTs are basically the spatial units with values in a particular dimension or the *Index of Development* greater than the average of all States and UTs. It is seen that in all the dimensions, the number of prosperous States and UTs are greater in urban than rural; except for the social dimension, where it is equal. While the overall performance of the urban areas is the best for Household Hygiene and Necessities Dimension, for rural areas it is best for both Household Hygiene and Necessities Dimension and Social Dimension. It is quite discouraging that in terms of Household Amenities Dimension and Economic Dimension, the majority of the States and the UTs are found below the national average (Household Amenities rural: 0.21, urban: 0.42 and Economic rural: 0.39, urban: 0.46). In the case of the *Index of Development* too, the urban areas are better off. While in urban areas, a majority (60 percent) of the States and UTs has a development score greater than the national average, only 45.71 percent of States have better development scores than the national average as far as rural areas are concerned. There are fifteen States and UTs (Andaman and Nicobar Islands, Chandigarh, Daman and Diu, Goa, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Delhi, Puducherry, Punjab, Sikkim, Tripura, and Uttarakhand) which have relative prosperity in both rural and urban areas of their territory. But these States and UTs together account for only 26 percent households and 25 percent population of the entire country. Most of these States and UTs are smaller in spatial extent (except Karnataka and Maharashtra). Better resource allocation and mobilization within smaller territories perhaps holds the key. However, the nature of prosperity is not similar to all these spatial units. While for urban areas conditions of hygiene and necessity are comparatively better in Andaman and Nicobar

Table 1: Urban to Rural Differences in Different Aspects of Development

| State/ UT | Social Dimension | Economic Dimension | Household Hygiene and Necessities Dimension | Household Amenities Dimension | Index of Development |
|---|---|---|---|---|---|
| Andaman & Nicobar | -0.012 | 0.409 | 0.251 | 0.219 | 0.217 |
| Andhra Pradesh | 0.013 | -0.654 | 0.253 | 0.266 | -0.030 |
| Arunachal Pradesh | 0.080 | 0.401 | 0.115 | 0.270 | 0.217 |
| Assam | 0.240 | 0.466 | 0.154 | 0.322 | 0.295 |
| Bihar | -0.187 | 0.014 | -0.140 | 0.019 | -0.074 |
| Chandigarh | -0.148 | 0.369 | 0.057 | 0.339 | 0.154 |
| Chhattisgarh | 0.085 | -0.653 | 0.023 | 0.199 | -0.087 |
| Dadra & N. Haveli | 0.449 | 0.485 | 0.158 | 0.285 | 0.344 |
| Daman and Diu | -0.069 | 0.730 | -0.210 | -0.187 | 0.066 |
| NCT of Delhi | -0.197 | 0.289 | -0.054 | 0.189 | 0.057 |
| Goa | -0.085 | 0.579 | -0.024 | 0.000 | 0.117 |
| Gujarat | 0.103 | -0.078 | 0.363 | 0.288 | 0.169 |
| Haryana | -0.118 | -0.048 | 0.074 | 0.408 | 0.079 |
| Himachal Pradesh | 0.122 | -0.126 | 0.013 | 0.325 | 0.083 |
| Jammu & Kashmir | -0.152 | 0.251 | 0.391 | 0.347 | 0.209 |
| Jharkhand | 0.113 | -0.116 | 0.130 | 0.247 | 0.094 |
| Karnataka | 0.090 | -0.102 | 0.180 | 0.418 | 0.147 |
| Kerala | 0.000 | 0.284 | -0.046 | -0.142 | 0.024 |
| Lakshadweep | -0.254 | 0.234 | -0.151 | -0.245 | -0.104 |
| Madhya Pradesh | 0.084 | -0.427 | 0.282 | 0.251 | 0.048 |
| Maharashtra | 0.069 | -0.328 | 0.170 | 0.418 | 0.082 |
| Manipur | -0.051 | 0.405 | -0.164 | 0.114 | 0.076 |
| Meghalaya | 0.256 | 0.421 | 0.239 | 0.256 | 0.293 |
| Mizoram | 0.188 | 0.416 | 0.141 | 0.424 | 0.292 |
| Nagaland | 0.056 | -0.048 | 0.024 | 0.187 | 0.055 |
| Odisha | 0.106 | -0.130 | -0.047 | 0.234 | 0.041 |
| Puducherry | 0.027 | 0.036 | 0.202 | 0.155 | 0.105 |
| Punjab | -0.085 | 0.189 | 0.034 | 0.232 | 0.092 |
| Rajasthan | -0.049 | -0.500 | 0.478 | 0.286 | 0.054 |
| Sikkim | 0.015 | -0.050 | 0.119 | 0.349 | 0.108 |
| Tamil Nadu | 0.006 | 0.238 | 0.123 | 0.201 | 0.142 |
| Tripura | 0.315 | -0.259 | 0.103 | 0.003 | 0.041 |
| Uttar Pradesh | -0.289 | -0.080 | 0.278 | 0.192 | 0.025 |
| Uttarakhand | -0.112 | -0.239 | 0.308 | 0.345 | 0.075 |
| West Bengal | 0.073 | 0.181 | 0.048 | 0.082 | 0.096 |

*N.B. Positive values refer to a greater score of urban areas than rural areas and negative values refer to a greater score of rural areas than urban areas. The administrative divisions of 2011 are considered.*

Islands, Goa, Haryana, Himachal Pradesh, Karnataka, Kerala, Delhi, Punjab, Sikkim and Uttarakhand. Household amenities are well available in Chandigarh, Delhi and Goa. Economic condition is stronger in Andaman and Nicobar Islands, Daman and Diu, Goa and Himachal Pradesh. The social dimension is best manifest in Kerala, followed by Tripura. On the other hand, rural areas of Delhi, Goa, Haryana, Himachal Pradesh, Kerala and Punjab possess better household hygiene and necessity. Goa performs better in terms of amenities and social conditions too. Other areas having better social conditions include only Andaman and the Nicobar Islands and Kerala. Economic dimensions are relatively better in Himachal Pradesh and Tripura.

### *Comparison among Different Zones*

Following the State Re-organization Act, 1956 and North Eastern Council (Amendment) Act, 2002 the States and the UTs are classified into six zones (Government of India, Ministry of Home Affairs, 2018) such as the Central (Uttar Pradesh, Uttarakhand, Madhya Pradesh, Chhattisgarh), Eastern (West Bengal, Bihar, Jharkhand, Odisha), North (Jammu and Kashmir, Punjab, Haryana, Himachal Pradesh, Punjab, Chandigarh, NCT of Delhi, Rajasthan), North-Eastern (Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Sikkim), Southern (Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Puducherry) and Western (Gujarat, Maharashtra, Goa, Dadra and Nagar Haveli, Daman and Diu); additionally, the Islands are grouped into another zone (Andaman and Nicobar Islands, Lakshadweep).

The rural areas of the Islands, Northern, Southern and Western zones are not only better than the other three zones but also better than the national average (Fig. 7). On the other hand, the urban areas of the Islands, Northern, North-Eastern, Southern and Western zones have a better level of development than the national average. The high pace of urbanization in the Western States is attributed to the best performance in urban areas among all the seven zones; the prosperity of the economy, including opportunities for foreign direct investment in different sectors of the economy, acted as a motivator behind them. Similarly, the rural areas of the Islands have quite surprisingly performed well. The rural inhabitants of the Islands are mostly dependent on indigenous activities like cultivation, fishing and forestry. This scenario is much true for them as they have comparatively less opportunity to migrate out or to commute for better livelihood. The performance of the Eastern zone is the poorest in all the selected parameters. Stagnation of economic activities and over-dependence on agriculture is mainly responsible for that. The Central and Eastern zone requires some serious attention from the Central and State government to improve the quality of living of the inhabitants.

### *Newly Formed States*

Newly carved out States like Chhattisgarh, Jharkhand and Uttarakhand may be considered separately to examine if the creation of such State from larger ones have benefitted them or not (Table 2).

It is observed that the formation of smaller States has translated into better performance in their rural areas. In the case of urban areas, the performance of Chhattisgarh is poorer than its *Mother State* Madhya Pradesh. But, the differences are not striking enough to arrive at a firm conclusion.

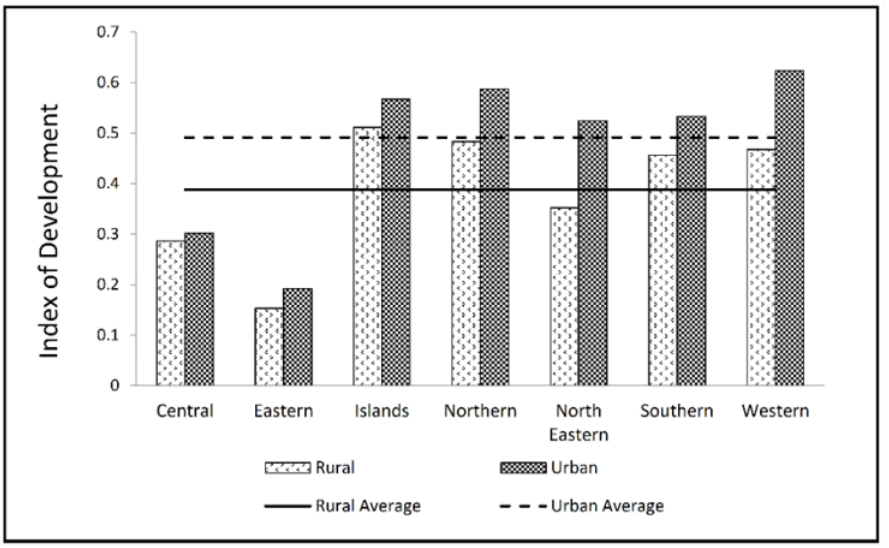


Fig. 7: Comparison of Development among Various Zones of India

## Conclusion

In the recent past, there are lively debates to improve the overall quality of life through the nourishment of pro-citizen development (United Nations Development Programme, 1990; Dasgupta, 1993; Ghosh M., 2006). The global popularity of the concept of inclusive development emphasizes the social and ecological aspects of development and improvement in the standard of living. It is obvious that when a backward state or UT is unable to provide basic household amenities to its dwellers, the inclusive framework empowers the government to address the issue in a sustainable way. It is true that the approaches of inclusive development are not just technocratic and instrumental approximation, rather it questions the fundamentals of societal inequalities and attempts to bridge the contradictions in pluralist systems. While doing so, it potentially opens up the black box of interrelations between the rich and the poor. It eliminates the gap between the villages and the cities. Inclusive development can provide a critical view of the societal, political and economic processes and enhances the number of beneficiaries in an area by empowering native dwellers. Hence, inclusive development helps to diminish the disparity amongst people and regions.

This study identifies that the undulating tract of Central and Eastern India is less developed as compared to other parts of the country. The states like Bihar, Chhattisgarh and Jharkhand have a large number of rural population, including tribal groups like Santhal, Asur, Birhor, Korwas, Paharia, Mal Paharia, Baiga, Bharia, Kamar, Saharia, etc. who are actually living in almost primitive and underdeveloped condition, devoid of basic household facilities. Agro-based states of Eastern India are also having some serious paucity of household infrastructure. Dehury and Mohanty (2015) have identified a major portion of Eastern India as poverty-stricken.

Table 2: Development Scores of the Newly Formed States and States from which Carved out

| States | Index of Development | | State in which the New State Used to Belong *(Mother State)* | Index of Development | |
|---|---|---|---|---|---|
| | Rural | Urban | | Rural | Urban |
| Chhattisgarh | 0.240 | 0.154 | Madhya Pradesh | 0.198 | 0.246 |
| Jharkhand | 0.125 | 0.219 | Bihar | 0.102 | 0.028 |
| Uttarakhand | 0.484 | 0.559 | Uttar Pradesh | 0.223 | 0.249 |

In some instances, the backwardness of North-Eastern states is caused by the physical separation of inhospitable terrain and cultural differences too. On the other hand, smaller states like Goa, possess a higher rate of urbanization and associated infrastructural development. Not only that, the performance of the smaller states and Union Territories are relatively better. This implies that a larger spatial extent is often a handicap in the resource mobilization and generation of opportunities. In many instances, the problem is deeply rooted in the language-based state formation process of the country, which did not consider the issues like spatial extent, resource availability, physical accessibility, economic stagnation, etc. The spatial extent of development is needed to be addressed while planning for administrative decentralization. Besides the inter-regional disparity, the intra-regional disparity also seeks serious attention. Ensuring economic stability to each household through job creation and entrepreneurship development should be brought under the prime focus of the government to address the situation.

The *Index of Development* formulated in this study is an exclusive tool for the identification of regional differences using India's largest secondary database i.e. Census data. It mostly deals with normative considerations of household level development and quality of life approaches. Hence, the IoD has the potential to become applicable to investigate regional development using future Census data also. Therefore, it provides an opportunity for planners, politicians, bureaucrats and researchers to investigate the rural-urban difference in development at various spatial scales.

**Acknowledgement**

The authors are indebted to Dr. Sayantani Sarkar of BITS Pilani, Goa campus for her valuable guidance towards contextual modifications of feeder parameters and their execution in this study.

**References**

Ahmad, A. (2008). *Social Geography*. Jaipur: Rawat Publications.

Alkire, S., and Foster, J. (2009). Counting and Multidimensional Poverty. In, J. V. Braun, R. V. Hill, and R. Pandya-Lorch (Eds), *The Poorest and Hungry: Assessments, Analyses, and Actions* (pp. 77-90).

Alkire, S., and Seth, S. (2015). Multidimensional Poverty Reduction in India between 1999 and 2006: *Where and How? World Development*, Vol. 72: 93-108.

Baud, I. S., Pfeffer, K., Sridharan, N., and Nainan, N. (2009). Matching deprivation mapping to urban governance in three Indian mega-cities. *Habitat International*, Vol. 33(4): 365-377.

Coe, N. M., Hess, M., Yeung, H. W., Dicken, P., and Henderson, J. (2004). 'Globalizing' regional development: a global production networks perspective. *Transactions of the Institute of British Geographers*, Vol. 29(4): 468–484.

Dasgupta, P. (1993). *An Inquiry into Well-being and Destitution*. Oxford University Press.

De, J. (2015). Gender Disparity in Literacy: A Macro Level Spatio-Temporal Account of India. *IOSR Journal of Humanities And Social Science*, Vol. 21(10): 52-59.

De, J. (2019). Investigating the Spatial Variation of Deprivation in Kolkata Municipal Corporation Area, India. *Annals of NAGI*, Vol. 39(1): 97-115.

Dehury, B. and Mohanty, S. K. (2015). Regional Estimates of Multidimensional Poverty in India. *Economics*, Discussion Paper No. 2015-34: 3-23.

Ghosh, B., and De, P. (2005). Investigating the linkage between infrastructure and regional development in India: era of planning to globalisation. *Journal of Asian Economics*, Vol. 15(6), 1023-1050.

Ghosh, M. (2006). Economic Growth and Human Development in Indian States. *Economic and Political Weekly*, Vol. 41(30): 3321-3329.

Government of India, Ministry of Home Affairs. (2018). *Zonal Council*. Retrieved January 9, 2018, from http://mha.nic.in/zonal_council

Harmaakorpi, V. (2006). Regional Development Platform Method (RDPM) as a tool for regional innovation policy. *European Planning Studies*, Vol. 14(8): 1085-1104.

Iglesias, K., Suter, C., Beycan, T. and Vani, B.P. (2017). Exploring Multidimensional Well-Being in Switzerland: Comparing Three Synthesizing Approaches. *Social Indicator Research*, Vol. 134: 847–875.

Mascarenhas, A., Coelho, P., Subtil, E., and Ramos, T. B. (2010). The role of common local indicators in regional sustainability assessment. *Ecological Indicators*, Vol. 10(3): 646-656.

Nijkamp, P. (1986). Infrastructure and regional development: A multidimensional policy analysis. *Empirical Economics*, Vol. 11(1): 1–21.

Nijkamp, P. (1991). Regional Development and Infrastructure. In B. Dahiya, Theoretical Foundations of Development Planning: *Sectoral and regional planning* (Vol. 4: Sectoral and Regional Planning Part B, pp. 263-275).

Nijkamp, P. (2009). Regional Development as Self-Organized Converging Growth. In G. Kochendörfer-Lucius , and B. Pleskovic, *Spatial Disparities and Development Policy* (Vol. Berlin Workshop Series, pp. 265-281).

Nijkamp, P., Sigar, A., and Graaff, H. d. (1981). *A multidimensional analysis of regional infrastructure and economic development*. Retrieved December 23, 2017, from http://dare.ubvu.vu.nl/bitstream/handle/1871/12537/Scanjob?sequence=1

Saksena, S., and Deb, M. (2016). Economic Growth and Human Development in Indian States after two decades of Economic Reforms. *Munich Personal RePEc Archive Paper No. 71128*: 1-13.

Seers, D, Nafziger, E. W., O'Brien, D.C., and Bernstein, H. (1979). The Meaning of Development. In Lehmann, D.Ed., *Development Theory: Four Critical Studies* (Vol. 104, pp. 9-31).

Sen, A. (2001). The Many Faces of Gender Inequality. *The New republic* (Part 9, pp. 466-477).

United Nations Development Programme. (1990). *Human Development Report 1990*.

United Nations Development Programme. (2005). *Human Development Report 2005*.

Vázquez, S. T., and Sumner, A. (2013). Revisiting the Meaning of Development: A Multidimensional Taxonomy of Developing Countries. *The Journal of Development Studies*, Vol.49 (12): 1728-1745.

Zohuri, B. (2016). Electricity, an Essential Necessity in Our Life. In *Application of Compact Heat Exchangers For Combined Cycle Driven Efficiency In Next Generation Nuclear Power Plants* (pp. 17-35).

**Jaydip De***
Assistant Professor
Department of Geography,
Barasat Govt. College,
Kolkata-700124, West Bengal.

**Ajanta Bhattacharya**
Independent Researcher of Geography

**Sharmistha Chatterjee**
Assistant Teacher of Geography
Salkia Shree Hanuman Balika Vidyalaya (H.S.),
Howrah- 711106, West Bengal

*Author for Correspondence
E-mail: de.jaydipde@gmail.com