Status of Human Development in Maharashtra: A District Level Analysis

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Abstract
The Human Development Index (HDI) is a relative measure of the country's life expectancy, literacy, education, and living standards. It is a standard measure of wellbeing, especially of child welfare. The present study is an attempt to bring out the inter-district disparities in terms of human development in Maharashtra, applying the human development index method based on the optimal combination of selected human development indicators. Furthermore, to compare the levels of human development between the different districts through choropleth maps. The result shows that two districts are in the less developed category, i.e., Nandurbar and Gadchiroli, and rests of the 33 districts are included in the moderately high and very high human development group.
Keywords: Development, Education, Health, Human Development Index, Life Expectancy, Literacy, Standard of Living.

Introduction

The Human Development Index is a composite description index that measures the country's average achievements in three basic aspects of human development, such as long and happy life, access to knowledge, and a decent quality of life (UNDP, 2014). Besides, it is used to differentiate how often the country is developed or undeveloped as well as to assess the impact of economic policies on the quality of life. The HDI is a well-respected indicator of social attainment and prosperity in the present scenario. Several persons have modified the original HDI proposed by the United Nations. The human development report of Maharashtra prepared by the YASHADA, Pune in 2002 and 2012. The present research work is an attempt to formulate a district-level human development index in Maharashtra. The study also helps in choosing operational areas for different development programs likely to be launched to overcome the problem of backwardness, which may be due to the physiographic variations and others. The present study also analyses the district-wise human development index concerning different indicators, such as health, education, and income.

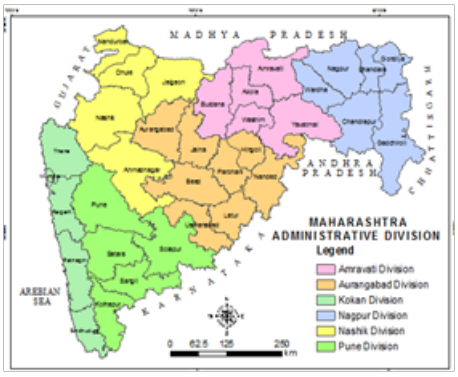
Objectives

The main objectives of the study are -

- To examines health, education, and income status in Maharashtra at the district level.
- To study the spatial inequality in the level of human development.

Study Area

Maharashtra continues to be one of the fastest-growing states of India in terms of income (Government of Maharashtra, 2014). The state of Maharashtra is the second largest after Uttar Pradesh in terms of population and the third-largest by area in India (Mundhe and Jaybhaye, 2014). The total population of the state is 112.4 million, which is 9.3 percent of the total population of India, and it is highly urbanized, with 45.2 percent of the population living in urban areas. Maharashtra lies between latitudes 16º N and 22º N and longitudes between 72º E and 80º E, and the geographical area is around 3,07,713 square kilometers falls in the western part of India, along with the Arabian Sea (Dikshit, 1986). Gujarat state and Union Territories of Daman, Dadra & Nagar Haveli are to the North-West direction; Madhya Pradesh to its North position; Chhattisgarh to the East way; Andhra Pradesh to the South-East and Karnataka and Goa state lie to the South of Maharashtra (Mundhe and Jaybhaye, 2014). Maharashtra state is divided into six-revenue divisions, namely Konkan, Pune, Nashik, Aurangabad, Amravati, and Nagpur, for an administrative purpose (Figure 1).



Source: Generated in a GIS platform

Figure 1: Study Area

Materials and Methods

The current research work is primarily based on secondary data. The analysis of human development, considered two decades of data, i.e., 2001 and 2011. The secondary data used for this study, i.e., total population, rural population, urban population, and literate population, has been obtained from the General population Table, A5 series-1 conducted by the Office of the Registrar General and Census Commission of India. The economic data collected from various issues of Economic Survey, Human Development Reports, and others. The district is taken as a unit of study for understanding and mapping purposes. Thus, collected data is compiled and analyzed with the help of MS-Excel and GIS software. HDI is a composite index that measures a simple arithmetical average of three basic aspects of human development, i.e., health, education, and a decent standard of living.

HDI = (Health Index + Educational Attainment Index + Standard of Living Index) / 3 (1)

Each of these indicators is defined as a dimension with values between 0 and 1 about the maximum and minimum values. The general formula for calculating each dimension index is (Roy, 2006; Gopalakrishna, 2008; Kanakachary, 2010; Rakeshd, 2014):

$$\text{Dimension Index} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum value} - \text{Minimum Value}} \quad (2)$$

Using various indicators, examine the development of the state of Maharashtra at the district level.

Assessment of Human Development Indicators

Education Index

Education plays a crucial role in transforming the socio-economic, health, and various other development-related outcomes (Sundaram, 1985). Education is described as the ability to read and write with understanding in any language as per the census of India. Knowledge is a strong predictor of long-term health and quality of life (Feinstein, 2002). Generally, higher literacy is a good indicator of the sound economy as well as a healthy society. The lower the literacy is a hurdle for not only the economy but also the society (Wayal et al., 2016). Literacy among females has shown far-reaching effects in narrowing the gender gap, increasing literacy levels as important human development indicators. Besides increased economic benefits, education facilitates the individual's ability to access and utilize various facilities and resources.

Status of Education in Maharashtra

The literacy rate of Maharashtra has remained consistently higher than the national average. The literacy levels of all age groups of the population

in Maharashtra as adult literacy rates have a direct bearing on school enrolment and student retention. According to the 2011 census year, the average literacy in Maharashtra is 82.9 percent. The levels of literacy vary from district to district. The highest literacy rate is registered in Mumbai Suburban (90.90%), while the lowest in Nandurbar (63.04%) district in 2011 (Table 1).

The state has shown good progress over the last five decades, improving its literacy rate by almost 50 percent. The male literacy rate in Maharashtra, which was only 86 percent in 2001, increased to 89.8 percent in 2011, which is higher than the national average of 82.14 percent for males. The female literacy rate increased from 67 percent in 2001 to 75.5 percent in 2011, which would be higher than the national average of 65.46 percent for females. Today, it is expected that the literacy rate would be higher than in 2011 due to efforts made by State Government and local bodies to increase literacy through Sarva Shiksha Abhiyan, free education, and a free travel pass to encourage girls to attend schools.

The highest literacy rate in the Mumbai Suburban district was around 89.9 percent in the 2001 census year. Several other districts have a literacy rate of over 80 percent. These include Nagpur, Amaravati, Akola, Wardha, Thane, Sindhudurg, and Pune. The lowest literacy rate of 55.8 percent was registered in the Nandurbar district, followed by Gadchiroli, Jalna, Parbhani, Hingoli, Nanded, and Beed districts (Figure 2).

According to the 2011 census survey, 13 districts in Maharashtra were above the state average (82.91%) of literacy, and 10 districts were below the state average but above 80 percent. Also, 11 districts, the literacy rate is below 80 percent and above 70 percent. As far as ranking goes, Mumbai suburban district has the highest literacy rate of 90.09 percent, followed by Nagpur, Mumbai, Amravati, Akola, Wardha, and Pune districts. Nandurbar is the only district with the lowest literacy rate in the state, with a 63.04 percent literacy rate (Figure 3).

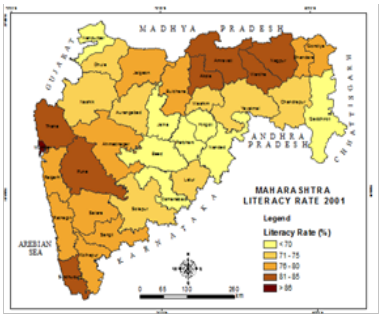


Figure 2: Literacy Rate, 2001

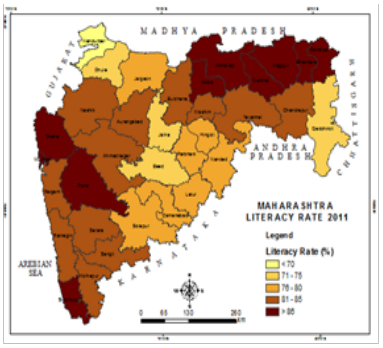


Figure 3: Literacy Rate, 2011

Table 1: District-wise Human Development Indictors (2001-2011)

District	Total Literacy Rate		IMR		Per Capita DDP	
	2001	2011	2001	2007-08	2001	2008-09
Ahmednagar	75.3	80.22	44	41	16311	27392
Akola	81.42	87.55	44	28	15822	24055
Amravati	82.54	88.23	61	59	16211	21804
Aurangabad	72.91	80.4	51	44	19539	30690
Bhandara	78.47	85.14	68	60	16110	25735
Beed	67.99	73.53	43	33	14398	21013
Buldhana	75.78	82.09	49	34	10729	19487
Chandrapur	73.17	81.35	67	74	19408	28730
Dhule	71.65	74.61	56	44	13166	21442
Gadchiroli	60.1	70.55	75	63	11745	14913

Gondiya	78.52	85.41	73	67	15211	23091
Hingoli	66.25	76.04	54	50	11203	18286
Jalgaon	75.43	79.73	50	48	16580	28939
Jalna	64.42	73.61	56	48	11458	20565
Kolhapur	76.93	82.9	38	13	23052	36178
Latur	71.54	79.03	50	53	11811	17674
Mumbai	86.4	88.48	40	18	36883	58818
Nagpur	84.03	89.52	54	40	23323	37995
Nanded	67.77	76.94	57	30	11022	18155
Nandurbar	55.78	63.04	61	75	11248	19156
Nashik	74.36	80.96	51	46	21927	35545
Osmanabad	69.02	76.33	47	50	13011	17847
Parbhani	66.07	75.22	50	51	12934	23146
Pune	80.45	87.19	32	28	32651	50158
Raigarh	77.03	83.89	42	35	32651	34377
Ratnagiri	75.05	82.43	37	25	16388	27685
Sangli	76.62	82.62	32	33	21147	30713
Satara	78.22	84.2	32	27	19610	29916
Sindhudurg	80.3	86.54	35	35	19794	31563
Solapur	71.25	77.72	43	23	16891	28828
Thane	80.66	86.18	39	34	31061	50408
Wardha	80.06	87.22	51	62	16955	26130
Washim	73.36	81.7	52	46	10152	14885
Yavatmal	73.62	80.7	61	47	13562	24118
Maharashtra	**76.88**	**82.91**	**47**	**44**	**21892**	**35033**

Note: IMR: Infant Mortality Rate, DDP: District Domestic Product

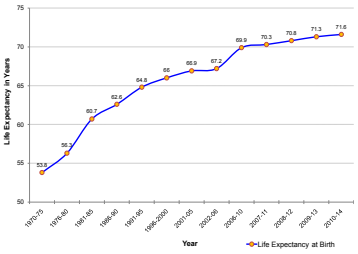
Sources: Directorate of Census Operations, Maharashtra 2001 and 2011, Economic Survey of Maharashtra, 2016-17, Maharashtra Human Development Report 2002 and 2012.

The Health Index

Health is also important for welfare. The WHO has described "health as a state of total physical, mental, and social wellbeing" (Sartorius, 2006). Health is connected to the physical, economic and social wellbeing of the person and together makes for a healthier society. The principal measures of health status include life expectancy at birth, the infant mortality rate (IMR), the crude death rate (CDR), and crude birth rate (CBR). The life expectancy index measures the relative achievement of a country's life expectancy at birth. For example, India's life expectancy at birth, as at the 2011 census, is 75.2 years. The life expectancy index is currently 0.870.

Life Expectancy at Birth

Life expectancy is the median number of years that a person is expected to live, assuming that current trends in mortality would continue. It represents the average life span and reflects the overall health and quality of life. Life expectancy for the population of Maharashtra was just 53.8 years in 1970-75 but increased to 71.6 years in 2010-14, which is also lower than the national average of 75.2 years (Figure 4).



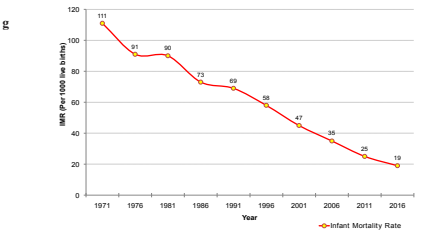
Source: http://niti.gov.in/state-statistics

Figure 4: Life Expectancy at Birth in Maharashtra

Life expectancy at birth is favorable for women because it has improved from 53.3 years in 1970-75 to 68.4 years in 2002-06, which is remarkable (Government of Maharashtra, 2012). However, the estimates of life expectancy at birth are usually not available in the smaller states of India as well as the districts of India. They are trying to include some methods for estimating life expectancy at birth in smaller states of India. We also plan to provide estimates of IMR and life expectancy for the districts of India using indirect techniques, i.e., regression equations, time series analysis, and others.

Infant Mortality Rate (IMR)

The IMR is one of the most important indicators of health status because it correlates with some health and economic characteristics like poverty, illiteracy, health, and education of the mother, access to health care facilities, and so on. The IMR captures the number of deaths in the first year of life per 1,000 live births. The causes of infant mortality could vary from poor maternal or child health to the non-availability of healthcare facilities. In this research work, we have used IMR as one of the components of the HDI. Infant Mortality Rate in Maharashtra declined from 111 in 1971 to 19 deaths per thousand births in 2016 (Figure 5). Maharashtra ranks third, after Kerala and Tamil Nadu, in terms of low infant mortality among states. The state has shown considerable progress in the reduction of the IMR with a marked drop of 94 points during the period 1971-2016. This remarkable achievement is attributed to the increase in health coverage under numerous government programs.



Source: http://niti.gov.in/state-statistics

Figure 5: Trend of Infant Mortality Rate in Maharashtra

In the 2001 census, two districts had the highest infant mortality rate, which is more than 71 deaths per thousand births, i.e., Gadchiroli (75) and Gondiya (73) districts. Other districts with IMR above the state average, i.e., 47 deaths per 1000 live births, are Bhandara, Chandrapur Amravati, Nandurbar, Yavatmal, Nanded, Dhule, Jalna, Hingoli, Nagpur, Washim, Aurangabad, Nashik, Wardha, Jalgaon, Latur, Parbhani, Buldhana, and Osmanabad (Figure 6).

In 2007-08, only two districts had IMR more than 71 deaths per 1000 live births, such as the Nandurbar and Chandrapur districts, but Gadchiroli and Gondiya districts have subtracted in this group (Figure 7). The IMR has registered a significant decline of fewer than 40 deaths per thousand births seen in almost part of the Maharashtra, i.e., Nagpur, Raigarh, Sindhudurg, Buldhana, Thane, Beed, Sangli, Nanded, Akola, Pune, Satara, Ratnagiri, Solapur, Mumbai, and Kolhapur districts. Vaccination campaigns and policy efforts to ensure that more and more deliveries take place in a government or private hospitals are the key reason. The government paid special attention to tribal areas such as Nandubar, Washim, Wardha, Gondiya, and Gadchiroli since these areas record higher malnutrition.

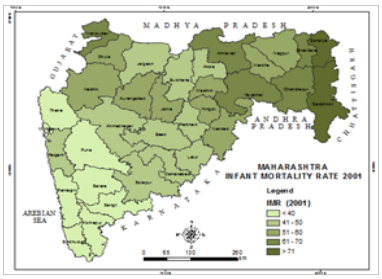


Figure 6: Infant Mortality Rate in Maharashtra, 2001

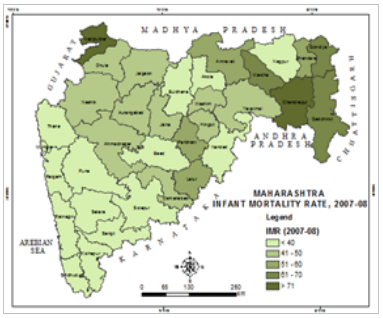


Figure 7: Infant Mortality Rate in Maharashtra, 2007-08

The Income Index

The third component of the HDI is income. Income was first used by Arthur Cecil Pigou to measure the welfare of individuals and households. The concept of national income as Gross Domestic Product (GDP) or Gross Net Product (GNP) was developed in the middle of this century. Now, it relates to the number of goods and services produced in a country over a year. GDP is the most substantial quantification of the overall economic activity of a nation. For the present study, income status measures with the help of Per Capita District Domestic Gross Product (PCDDGP). District income has been defined as the sum of the economic value of all goods and services produced within the district, irrespective of the fact, whether persons in the district on the income.

Income Profile of Maharashtra

Maharashtra remains second in terms of GDP, accounting for 14.5 percent of India's GDP. In 2008-09, the per capita Nate State Domestic Product (NSDP) at current prices was about 46 percent higher than the national average. The preliminary estimate for 2008-09 indicates that the NSDP at current prices amounts to Rs 5,975,424.2 and per capita income to Rs 54,867. Maharashtra is a large state made up of 35 districts, with different socio-economic, cultural, population parameters, a source of livelihood, and climatic conditions. Each district in the state is different from the others and provides different strengths to the economy of the state. It would be incorrect to form an opinion of the growth of the state without considering the growth at district levels, which highlights the widening or reducing regional disparities, which would facilitate the formation and implementation of policies catering to a local level.

Inter-district Disparities in Income

In Maharashtra, the profile of inter-district inequalities in per capita income (NDDP at constant prices) has been slightly reduced. This marginal reduction can be attributed to the improved economic performance of some of the poorer districts, including Dhule, Hingoli, Washim, Gadchiroli, and Nandurbar, which showed faster growth rates than the state as a whole. Despite this improved performance, these districts do not show better results at the aggregate macro level due to their limited share of the total state. More affluent districts like Mumbai, Thane, and Pune continue to lead the development scenario. The state has enjoyed a high level of per capita income made possible by rapid growth in the non-agricultural sector. This aspect, along with the restricted geographical spread of economic development has meant that both the average level of income and the degree of inequality in the distribution of income to individuals in the state have remained high.

In the 2001 census year, 13 districts had the lowest per capita district domestic product, i.e., Rs 15000 (Figure 8). These are Beed, Yavatmal, Dhule, Osmanabad, Parbhani, Latur, Gadchiroli, Jalna, Nandurbar, Hingoli, Nanded, Buldhana and Washim. The remaining six districts had a higher per capita DDP than the state average, such as Nashik, Kolhapur, Nagpur, Thane, Pune, Raigarh, and Mumbai. However, in 2008-09, the scenario was changed, with only two districts having less than Rs 15, 000 per capita district domestic products such as Gadchiroli and Washim (Figure 9). The two important results here are, firstly, that poorer districts have increased their income rates over time and, secondly, that the distribution of per capita income across districts, which should have been positively skewed.

In 2008-09, Mumbai was the highest per capita domestic product of the state than three times in other parts of the state. The district receives the highest investment that will drive the development of

the area. However, this growth comes at the cost of numerous social problems such as higher population density, a large migration of labor, leading to an increase in demand on public utility services.

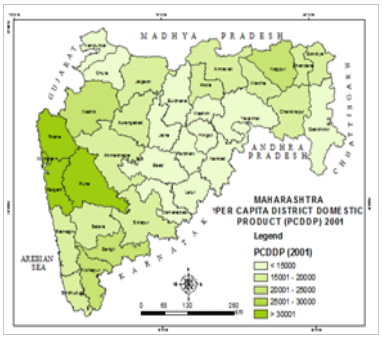


Figure 8: Per Capita District Domestic Product, 2001

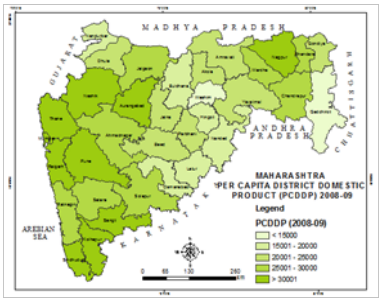


Figure 9: Per Capita District Domestic Product, 2008-09

Results and Discussion

Figure 10 and 10 describe the inter-district disparities in human development in the state of Maharashtra during 2001 and 2011 census years. The present study human development index is classified into four categories, based on HDI fixed cutoff points, derived from quartiles of component indicators distributions, i.e., low (< 0.550), medium (0.550 to 0.699), high (0.700 to 0.799) and very high (0.800 and above) human development (UNDP, 2016). The range of variations in the Human Development Index varies from 0.513 to 0.841 in districts of Maharashtra. In 2001, Maharashtra state, there was no single district in a very high human development group. The districts of Raigarh, Thane, Pune, and Mumbai were among the high human development group in 2001. However, this situation was completely different in 2011, with nearly 19 districts belonging to the high human development group. It clearly shows that the human development trend of the state of Maharashtra (district-wise) has increased rapidly due to improved health, education facilities, poverty reduction, social risks, and others. The low human development was noticed in Nandurbar and Gadchiroli district, which is less than 0.550 HDI values in 2001 due to remote areas, and the tribal population is mostly concentrated in that area. This is the priority area for executing various developmental plans.

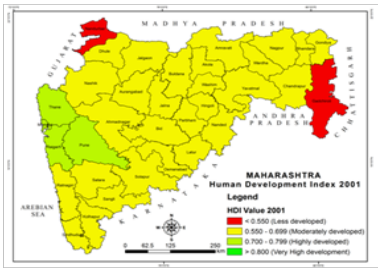


Figure 10: Human Development Index of Maharashtra, 2001

However, in 2011 there was no single district in this group (Figure 11). During both years, the Mumbai district secured first place in terms of HDI among 35 districts of Maharashtra state. Human development in Maharashtra has improved over time. Between 2001 and 2011, aggregate HDIs showed improvement across districts. The range of extreme HDI values has not changed much. Thus, the disparity in HDI between progressive and backward districts persists. Progress, in general, appears to have been more significant at the lower end than at the higher end of the districts, when ranked by the HDI. Thus, the districts of Nandurbar, Gadchiroli, Jalna, Hingoli, and Washim show more improvements that are significant in HDI values than progressive districts such as Pune, Mumbai, Thane, and Kolhapur.

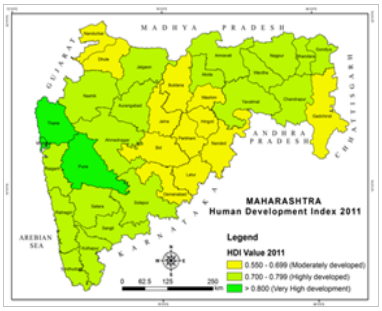


Figure 11: Human Development Index of Maharashtra, 2011

Conclusion

The combined effect of various components of human development, namely, knowledge, life expectancy, and income reflected through the Human Development Index, which helps in a detailed understanding of the socio-economic condition of the study area. As far as education is concerned, today's Maharashtra presents a mixed picture of plenty and poverty due to the expansion of schooling opportunities. Health resources have identified inter-districts disparities in Vidarbha and Marathwada regions as compared to Mumbai and Western Maharashtra. Some trends related to health revealed that special attention in tribal areas as well as rural-urban areas. The third component of the HDI is a decent standard of living depends on the economy. Maharashtra's economic situation has shown a high growth and is a notable big success for the rest of the nation; however, its shortcoming is its unequal distribution of growth profits. The HDI score for Maharashtra has improved from 0.666 in 2001 to 0.752 in 2011. The districts situated in the western part of the state, i.e., Mumbai, Pune, and Thane, are very highly developed as compared to the other districts of the state. Nevertheless, the Nandurbar, Gadchroli, and Chandrapur districts are less developed due to the forest areas, and the tribal population is mostly concentrated in that area. It revealed that special attention to be given to these areas.

References

Dikshit, K.R. *Maharashtra in Maps*, Maharashtra State Board for Literature and Culture, Mantralaya, Bombay,1986.

Economic Survey of Maharashtra 2010-11, Directorate of Economics and Statistics, Planning Department, Government of Maharashtra, Mumbai, 2011.

Feinstein, L. *Quantitative Estimates of the Social Benefits of Learning 2: Health (Depression and Obesity) Report No. 6*, Centre for Research on the Wider Benefits of Learning, 2002.

Ghara, Tushar Kanti, et al. "District-Wise Analysis of Higher Education - A Study for Jharkhand, Madhya Pradesh, Orissa and West Bengal Based on AISHE 2017-18." *IOSR Journal of Humanities and Social Science*, vol. 23, no. 6, 2018, pp. 25-29.

Gopalakrishna, B.V. *Regional Disparities in Human Development - A Comparative Study of Mysore and Hassan Districts*. University of Mysore, 2008.

Human Development Report 2014, United Nations Development Programme (UNDP), 2014.

Human Development Report 2016, United Nations Development Programme (UNDP), 2016.

Human Development Report Maharashtra 2002, Planning Department, Government of Maharashtra, Mumbai, 2002.

Kanakachary, S. "Regional Disparities in Andhra Pradesh: A Spatial Study." S.V. University, Tirupathi, Andhra Pradesh, 2010.

Maharashtra Human Development Report 2012, Government of Maharashtra, Sage Publications India Pvt. Ltd, New Delhi, 2012.

Mundhe, N.N., and Jaybhaye, R.G. "Monitoring Level, Trends and Patterns of Urbanisation in Maharashtra (1991-2011)." *Indian Streams Research Journal*, vol. 4, no. 6, 2014, pp. 1-12.

Provisional Population Totals: *Maharashtra*, Government of India, Census of India, 2011.

Rakesh, M. *Disparities in Human Development - An Analysis of Andhra Pradesh State*, Osmania University, Hyderabad, 2014.

Reddy, A.A. and M.C.S. Bantilan. "Regional disparities in Andhra Pradesh, India." *Local Economy: The Journal of the Local Economy Policy Unit,* vol. 28, no. 1, 2012, pp. 123-135.

Rout, H.S., and S.B. Murthy. *Human Development in India, Challenges and Policies*, New Century Publications, 2010.

Roy, H. *Trend and Pattern of Human Development in Assam*, Assam University, Silchar, 2006.

Sartorius, N. "The Meanings of Health and its Promotion." *Croatian Medical Journal,* vol. 47, no. 4, 2006, pp. 662-664.

Sundaram, K.V. and Nangia Sudesh. "Population Geography." *Contribution to Indian Geography,* edited by R.P. Misra, Heritage Publishers, 1985.

Wayal, Navnath, et al. "Identifying Spatio-Temporal Pattern of Literacy in Ahmednagar District." *International Journal of Recent Scientific Research*, vol. 7, no. 12, 2016, pp. 14664-14669.

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