

## STATUS OF HUMAN DEVELOPMENT IN WESTERN UTTAR PRADESH

Sayed Waseem Ahmad Ashraf, Surendra Kaur Rawal and Sabbir Ahmed

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The Human Development Index is a comparative measurement of life expectancy, literacy, education, and standards of living of a country. It is a standard means of measuring well-being, especially of child welfare. The present study is an attempt to bring out the inter district disparities in terms of human development in Western Uttar Pradesh. The result shows that eight districts are in developed category and rest of the nineteen districts are either in the moderate and less developed category.

**Keywords:** Health, Educational Attainment, Standard of Living, Life expectancy, Dimension Index.

### Introduction

The Human Development Index (HDI) is a composite statistic used to rank countries by the level of “human development”, taken as a synonym of the older terms “standard of living” and/or “quality of life”. The HDI is a comparative measure of life expectancy, literacy, education, and standards of living of a region. It is the standard means of measuring well-being, especially child welfare. It is also used to distinguish whether the country is a developed, developing or an underdeveloped country, besides measuring the impact of economic policies on quality of life. There are also HDI for states, cities, villages, etc. by local organizations or companies. HDI formula result is a number from 0 to 1, 1 being the best outcome possible. India ranks 134 as per the 2011 Human Development Report (HDR) and falls in medium human development category.

Human Development Index (HDI) is a well respected indicator of social attainment and prosperity in present day studies. The original HDI proposed by The United Nations (UN) has been modified by several authors or social scientists. The Human development Report of Uttar Pradesh, prepared by ‘Development and Planning Department’ of state in 2004 used parameters different from that of the UN (Roy, 2008).

Present study is an attempt to make an index from the available district level statistical data for a comprehensive study of different district in terms of their relative prosperity, livelihood pattern and social well being.

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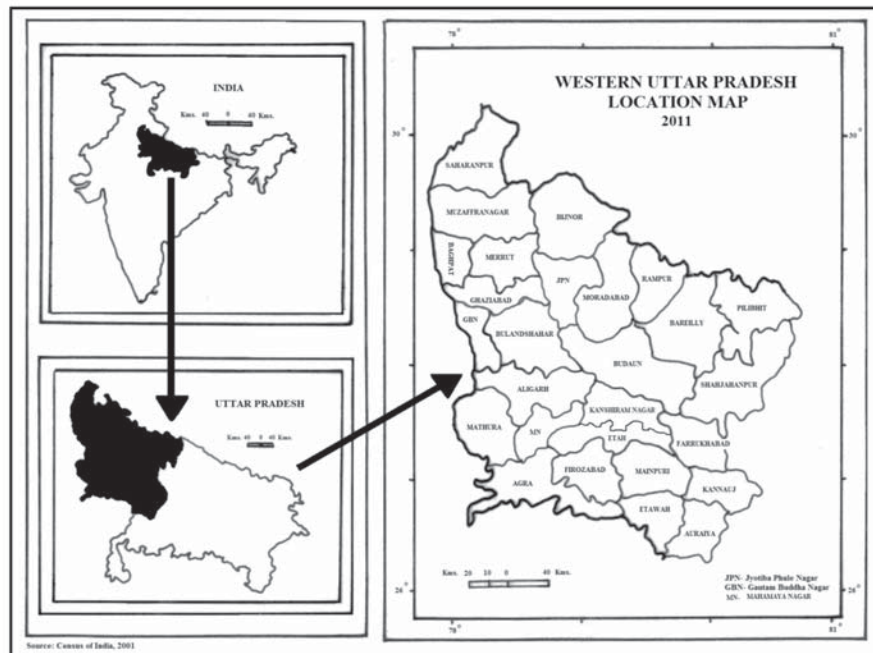
### Objectives

The main objectives of the study are:

1. To prepare an index which can represent the inter district disparities in standard of living and relative prosperity with accuracy.
2. To identify, with the help of index prepared to show the developed, moderately developed and underdeveloped district within the Western Uttar Pradesh district.

### Study Area

Western Uttar Pradesh lies approximately between  $26^{\circ} 20' N$  and  $30^{\circ} 31' N$  latitudes and  $77^{\circ} 45'$  to  $80^{\circ} 22'$  E longitudes. It covers an area of 80,076 sq. kms. and holds a population of about 61.60 millions. It contains twenty seven district, namely Saharanpur, Muzaffarnagar, Meerut, Baghpat, Bulandshahar, Ghaziabad, Gautam Budh Nagar, Aligarh, Hathras, Mathura, Agra, Firozabad, Mainpuri, Kanshiram Nagar, Etah, Bareilly, Badaun, Shahjahanpur, Pilibhit, Bijnor, Moradabad, Jyotiba Phule Nagar, Rampur, Farrukhabad, Kannauj, Etawah and Auraiya [Census of India, 2011] (Fig. 1). Western Uttar Pradesh which occupies the fertile north-western portion in Upper Ganga Plain, is the most developed and prosperous region of the



**Figure 1:** Location Map of Western Uttar Pradesh

state Uttar Pradesh. Nearly 71.30% population live in rural areas. Green revolution had a tremendous impact on agricultural development. Industrial distribution is uneven in the region. Literacy level is 70.17% as a whole and 79.15% male literacy and 59.92% female literacy. It is imperative to chalk out a detailed plan with reference to education and health condition for the balanced socio-cultural development of the region. The analysis of regional disparities provide base for formulation of policies and plans aimed at developing a suitable operational strategy for minimizing and eliminating regional disparity. Such type of studies helps administrator policy makers and planners to identify regions of relative level of development in order to know the needs of varied regions.

### **Human Development Indicators**

The Human Development Index attempts to capture in summary form, the three basic dimensions of health (expressed through longevity, that is, life expectancy at birth) knowledge (expressed as a combination of the literacy rate and the school enrolment ratio) and the standard of living (expressed as a combination of per capita income, per capita consumption expenditure and population living above the poverty line).

### **Database and Methodology**

#### ***Data Sources***

As far as possible, the most reliable sources of data have been used. However, for many of these variables, district-level data have had to be generated through statistical techniques applied to the existing official data. The data for the present analysis have been obtained from the secondary sources like, Primary Census Abstract, District Statistical Hand Book, Village and Town Directory, Human Development Report of Western Uttar Pradesh etc.

#### ***Methodology***

The calculations of Human Development Index is based on secondary data taken from Government of Uttar Pradesh and are similar to those followed by the UNDP, with some variations with respect to the estimation of the income index. The HDI attempts to capture in summary form, the three basic dimensions of health (expressed through longevity, that is, life expectancy at birth) knowledge (expressed as a combination of the literacy rate and the school enrolment ratio) and the standard of living (expressed as a combination of per capita income, per capita consumption expenditure and population living above the poverty line).

Like the classical HDI propounded by UN, present index is also fabricated with three basic parameters but slightly different from the former one. Three basic components of the HDI for the districts of Western Uttar Pradesh are-

- I. Health Index
- II. Educational Attainment Index
- III. Standard of Living Index

The HDI is a simple arithmetical average of these three indices. Each of these indicators is defined as a dimension with value between 0 and 1 with reference to maximum and minimum values. The general formula for calculating each dimension index is:

$$\text{Dimension Index} = \frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

The HDI is then calculated as a simple average of the three different dimension values, i.e.

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

### Health Index

Life expectancy at birth is the main parameter to measure the health condition of the concerned population (Roy, 2008). But in district level no such data is available. So here health index is calculated from three available district level parameters i.e. Health Centre Density, Availability of Doctors and Availability of Beds in Hospitals are used in describing the overall health scenario of Western Uttar Pradesh.

- (i) **Health Centre Density:** Availability of health centre, clinics or hospitals within a negotiable distance increases probability of fast remedy from health hazards (Roy, 2008, p. 81). The formula used to calculate the health centre density is as follows-

$$\text{Health Centre Density}/10 \text{ sq. km.} = (\text{No. of Health Centre} \div \text{Area}) \times 10$$

- (ii) **Availability of Doctors-** Adequate availability of doctors increases the probability of getting cured and nurtured. So the availability of doctors per 1000 population is considered as an important parameter (Roy, 2008, p. 81). It is calculated by the following formula-

$$\text{Availability of Doctors} = (\text{No. of Doctors} \div \text{Total Population}) \times 1000$$

- (iii) **Availability of Beds in Hospitals:** Like the former the availability of beds in hospitals ensures the indoor clinical facility in time of need (Roy, 2005, p.152). All types of beds in hospitals, both government and private, are counted in this parameter. Thus the availability of beds per 1000 population is calculated by the following formula-

$$\text{Availability of Beds} = (\text{No. of Beds} \div \text{Total Population}) \times 1000$$

Health Index of the district is then prepared by averaging the above mentioned three parameters. The formula is-

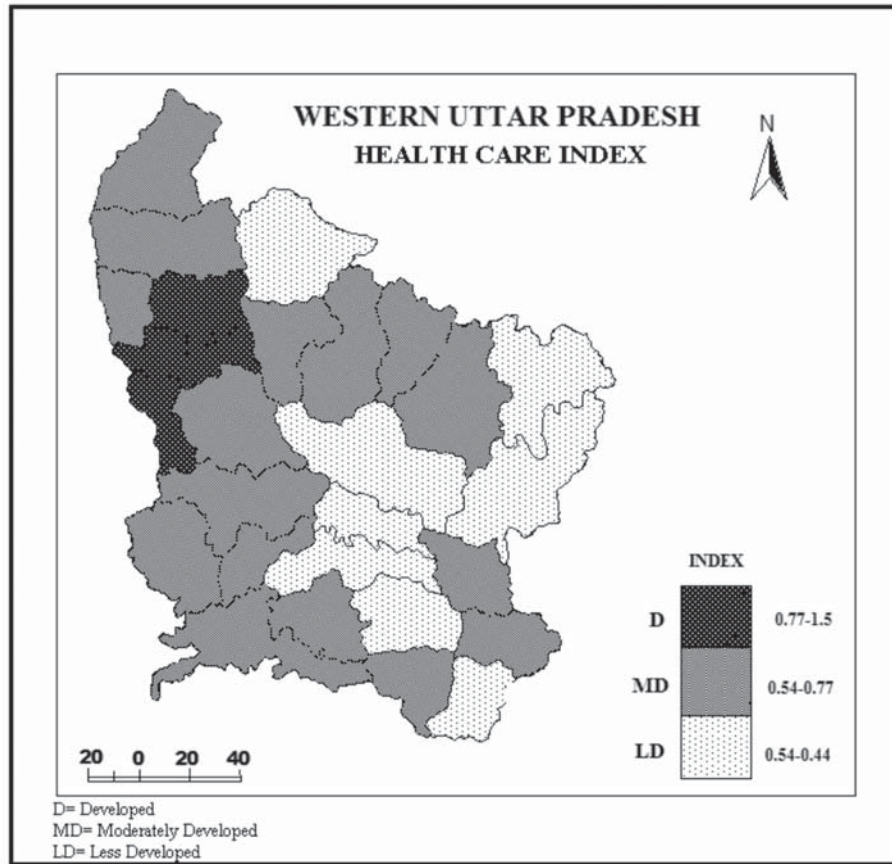
TABLE 1: HEALTH CARE INDEX FOR WESTERN UTTAR PRADESH

<i>Districts</i>	<i>Health Centre Density per 10 sq. km.</i>	<i>No. of Doctors/'000 Population</i>	<i>Availability of Beds/'000 Population</i>	<i>Health Index</i>
Saharanpur	1.42	0.07	0.31	0.60
Muzaffarnagar	1.58	0.05	0.28	0.63
Gautam Budh Nagar	3.03	0.10	0.17	1.10
Ghaziabad	4.26	0.03	0.22	1.50
Baghpat	2.06	0.07	0.19	0.77
Meerut	2.22	0.08	0.85	1.05
Mathura	1.06	0.07	0.71	0.61
Aligarh	1.26	0.04	0.93	0.74
Bulandshahar	1.30	0.07	0.35	0.57
Badaun	1.03	0.04	0.29	0.45
Agra	1.44	0.06	0.79	0.76
Mahamaya Nagar	1.39	0.06	0.30	0.58
Rampur	1.29	0.06	0.30	0.55
Jyotiba Phule Nagar	1.26	0.06	0.39	0.57
Moradabad	1.65	0.03	0.31	0.66
Bijnor	1.14	0.05	0.25	0.48
Pilibhit	0.91	0.07	0.36	0.45
Bareilly	1.45	0.06	0.40	0.64
Etawah	1.20	0.05	0.39	0.55
Etah	1.12	0.06	0.28	0.49
Kanshiram Nagar	1.21	0.05	0.29	0.52
Farrukhabad	1.48	0.08	0.48	0.68
Firozabad	1.47	0.05	0.29	0.60
Mainpuri	1.13	0.08	0.37	0.53
Shahjahanpur	0.99	0.06	0.28	0.44
Kannauj	1.39	0.09	0.31	0.60
Auraiya	1.20	0.07	0.20	0.49

*Source:* Calculated by the Authors from Sankhyikiya Patrika, 2011

Health Index = (Health Centre Density + Availability of Doctors + Availability of Beds in Hospitals) ÷ 3

Health Care Index calculated for different districts of Western Uttar Pradesh shows a poor picture. There are only three districts having one health centre within 10 sq. km. periphery. Availability of doctors and beds in hospitals also show very poor figure. No district has even one doctor per 1000 population. In terms of beds in hospitals only Aligarh district has around one bed per 1000 of population while rest are far behind from this value. In overall health index the highest score reaches 1.50 for Ghaziabad district.



**Figure 2:** Health Care Index Map of Western Uttar Pradesh

The districts have been classified into three groups representing levels of achievement in health care index i.e. less developed, moderately developed and developed. Name of the districts in different classes are as follows-

- (a) **Less Developed** (below 0.54 score): Badaun, Bijnor, Pilibhit, Etah, Kanshiram Nagar, Mainpuri, Shahjahanpur and Auraiya.
- (b) **Moderately Developed** (0.54-0.77 score): Saharanpur, Muzaffarnagar, Baghpat, Mathura, Aligarh, Bulandshahar, Agra, Mahamaya Nagar, Rampur, Jyotiba Phule Nagar, Moradabad, Bareilly, Etawah, Farrukhabad, Firozabad and Kannauj
- (c) **Developed** (above 0.77 score): Gautam Budh Nagar, Ghaziabad and Meerut,

### Educational Attainment Index (EAI)

It consists of a weighted average of the Census literacy rate (two-thirds weight) and the school enrolment rate provided by the NSS for age group 6-14 years (one-third weight). In the present study total literacy rate and combined enrolment index are used to calculate EAI. The Educational Attainment Index (EAI) is thus calculated by the following formula-

$$EAI = 2/3 (Total Literacy Index) + 1/3 (Combined Enrolment Index)$$

- (i) **Dimension Index:** Enrolment index of each standard i.e. primary, middle, high and higher secondary are prepared by the formula-

$$Dimension Index = \frac{Actual\ value - Minimum\ value}{Maximum\ value - Minimum\ value}$$

- (ii) **Total Literacy Index:** Total literacy rate of each block represents its relative achievement and failure in mass education. Higher literacy rate indicates a developed society. To prepare the literacy index, actual percentages of different blocks are divided by 100% (Roy, 2008, p. 84).

$$Total\ literacy\ index = Actual\ \% \div 100\%$$

- (iii) **Combined Enrolment Index:** Numbers of students in primary, middle, high and higher secondary schools are taken for combined enrolment index. Combined Enrolment Index (CEI) is an average of these four parameters. The formula is as following-

$$CEI = (Enrolment\ in\ Primary\ School\ Index + Enrolment\ in\ Middle\ School\ Index + Enrolment\ in\ High\ school\ Index) \div 3$$

'Educational Attainment Index' shows over all a mediocre standard (Roy, 2008, p. 86). The Districts have been classified into three groups representing levels of achievement i.e. less developed, moderately developed and developed. It is clear from the Table 2 that most of the (11 districts) districts of Western Uttar Pradesh are moderately developed in terms of educational standard. Eight districts have occupied less and high rank respectively in the hierarchy. Aligarh ranks the first as it scores 0.76. Name of the districts in different classes are as follows-

- (a) **Less Developed** (below 0.56 score): Baghpat, Badaun, Rampur, Jyotiba Phule Nagar, Moradabad, Pilibhit, Kanshiram Nagar, Mainpuri and Farrukhabad.
- (b) **Moderately Developed** (0.56-0.65 score): Saharanpur, Mathura, Mahamaya Nagar, Bareilly, Etawah, Etah, Firozabad, Shahjahanpur, Kannauj and Auraiya.
- (c) **Developed** (above 0.65 score): Muzaffarnagar, Gautam Budh Nagar, Ghaziabad, Meerut, Aligarh, Bulandshahar, Agra and Bijnor.



TABLE 2: EDUCATIONAL ATTAINMENT INDEX OF WESTERN UTTAR PRADESH

<i>Districts</i>	<i>Enrolment in Primary School</i>	<i>Enrolment in Middle School</i>	<i>Enrolment in High School</i>	<i>Combined Enrolment Index</i>	<i>Total Literacy Index</i>	<i>Educa- tional Attainment Index</i>
Saharanpur	0.00	0.08	0.74	0.27	0.72	0.57
Muzaffarnagr	0.72	0.32	0.71	0.58	0.70	0.66
Gautam Budh Nagar	1.00	0.00	0.06	0.35	0.82	0.67
Ghaziabad	0.51	0.53	0.61	0.55	0.85	0.57
Bahgpat	0.04	0.31	0.00	0.12	0.74	0.53
Meerut	0.45	0.57	0.55	0.52	0.75	0.67
Mathura	0.35	0.37	0.67	0.46	0.73	0.64
Aligarh	0.81	0.89	0.93	0.88	0.70	0.76
Bulandshahar	0.85	1.00	0.60	0.82	0.70	0.74
Badaun	0.72	0.28	0.24	0.41	0.53	0.49
Agar	0.48	0.43	0.98	0.63	0.69	0.67
Mahamaya Nagar	0.28	0.36	0.39	0.34	0.73	0.39
Rampur	0.09	0.09	0.06	0.08	0.55	0.54
Jyotiba Phule Nagar	0.38	0.28	0.27	0.30	0.66	0.53
Moradabad	0.26	0.14	0.86	0.42	0.59	0.63
Bijnor	0.58	0.61	0.59	0.59	0.70	0.49
Pilibhit	0.20	0.29	0.07	0.19	0.61	0.60
Bareilly	0.84	0.42	0.52	0.59	0.61	0.64
Etawah	0.13	0.34	0.52	0.33	0.80	0.58
Etah	0.23	0.20	0.42	0.28	0.73	0.47
Kanshiram Nagar	0.03	0.33	0.15	0.17	0.62	0.54
Farrukhabad	0.19	0.22	0.19	0.20	0.71	0.63
Firozaabd	0.05	0.17	1.00	0.41	0.75	0.63
Mainpuri	0.27	0.36	0.36	0.33	0.78	0.35
Shahjahanpur	0.60	0.52	0.39	0.50	0.62	0.58
Kannauj	0.32	0.19	0.26	0.26	0.74	0.58
Auraiya	0.13	0.26	0.27	0.80	0.22	0.61

*Source:* Calculated by the Authors from Sankhyikiya Patrika, 2011

### Standard of Living Index (SLI)

Per capita Purchasing Power (PPP) is generally taken as the measure to calculate the living standard of the people. But at district level no such secondary data is available. So here a different index is generated to bring out the economic status of the people in the district.

At first, net per capita value generated by main crops in different districts of Western Uttar Pradesh district are calculated. Here only rice wheat, sarso and potato are taken for study. The formulas are:

$$\text{Total Value (Rs.)} = \text{Total Production} \times \text{Whole sale value per unit.}$$

Per capita value generated by each crop = Total value of the crop ÷ Population of the districts

$$\text{Net per capita value generated} = \text{Rice} + \text{Wheat} + \text{Sarso} + \text{Potato value per capita.}$$



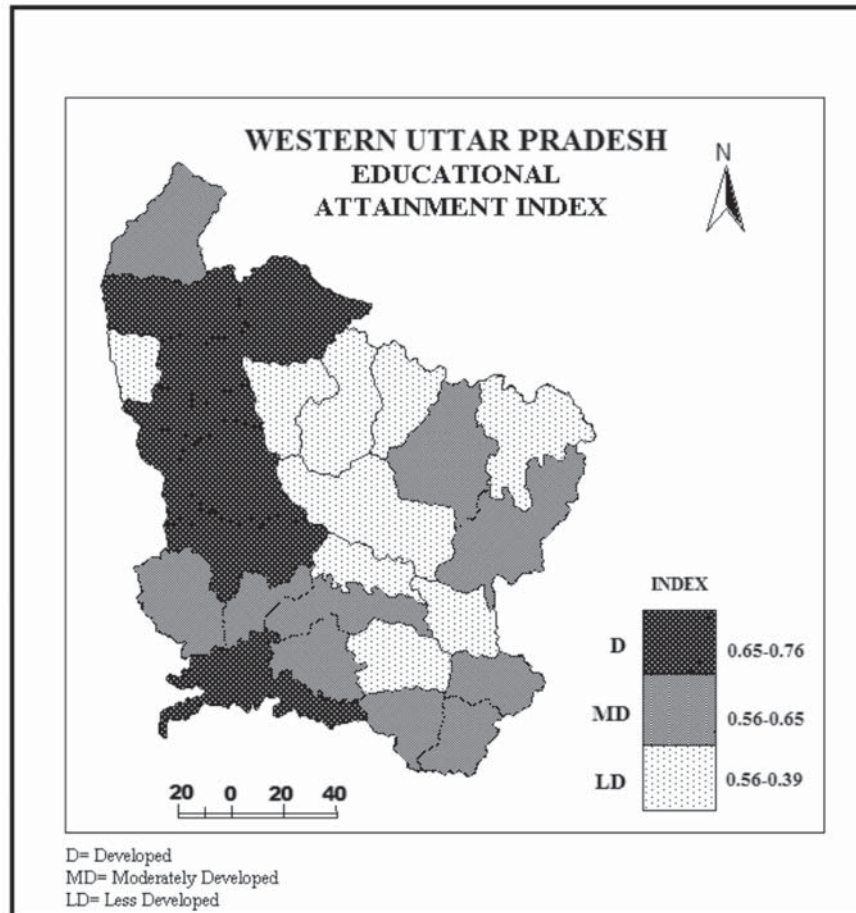
TABLE 3: INDEX OF NET PER CAPITA VALUE GENERATED BY MAIN CROPS OF WESTERN UTTAR PRADESH

Districts	Rice		Wheat		Sarso/Lahi		Potato		Net Per Capita Value Generated (Rs.)*		Index of Per Capita Value Generated by Main Crops*
	Production (Qt.)	Per Capita (Rs.)*	Production (Qt.)	Per Capita (Rs.)*	Production (Qt.)	Per Capita (Rs.)*	Production (Qt.)	Per Capita (Rs.)*	Per Capita (Rs.)*	Per Capita (Rs.)*	
Saharanpur	1294240	354.92	3409670	1131.89	12100	6.29	467580	62.76	1555.86	0.11	
Muzaffarnagar	967630	380.40	4768080	1335.28	40400	23.15	114290	6.90	1745.73	0.14	
Gautam Budh Nagar	556220	1056.68	2026810	1475.99	10100	44.64	31780	17.51	2594.82	0.31	
Ghaziabad	822090	269.30	2762010	700.36	37220	19.09	1237290	159.26	1148.01	0.03	
Baghpat	115290	130.59	2030500	1722.03	19350	103.28	47110	29.67	1985.57	0.19	
Meerut	457230	195.63	3026650	1066.71	57460	65.84	467580	63.07	1391.25	0.08	
Mathura	974330	608.69	6198250	2845.66	720960	679.30	5461160	1639.28	5772.92	0.92	
Aligarh	1158860	492.08	7170230	2242.50	293060	184.67	1417430	414.75	3333.99	0.45	
Bulandshahar	1789810	959.24	7139340	2479.43	101240	66.56	1197570	249.20	3754.42	0.53	
Badaun	1380310	609.71	10971850	3501.90	400230	224.22	3117790	642.41	4978.25	0.77	
Agra	886660	28.86	4351380	1045.93	834430	514.85	3050290	565.39	2155.03	0.22	
Mahamaya Nagar	294320	272.76	2429200	272.76	90330	121.50	11118540	9587.78	11840.78	2.09	
Rampur	3132030	2414.00	4819640	2435.21	41520	45.34	114290	12.23	490.78	0.75	
Jyotiba Phule Nagar	535250	455.85	2659860	1617.23	26790	28.79	477950	133.86	2235.74	0.24	
Moradabad	3039180	1015.58	6125710	1573.41	105270	49.07	22736680	163.86	2801.93	0.35	
Bijnor	1455000	607.45	3259320	1030.73	32070	20.87	172300	37.88	1696.94	0.13	
Pilibhit	424570	3855.58	5380980	2773.39	67420	89.02	783720	234.67	6952.66	1.15	
Bareilly	2901300	1190.97	5918800	1524.32	127140	83.99	3340730	291.75	3091.03	0.40	
Etawah	1114720	1129.43	2755420	2041.49	224670	320.11	3470870	879.17	4370.20	0.65	
Etah	43550	394.43	4119480	23340.40	190050	197.26	13039620	4442.42	7368.52	1.23	
Kanshiram Nagar	305960	339.33	2818680	2101.04	146610	204.70	1115750	380.15	3025.22	0.39	
Farrukhabad	281190	212.73	2473520	1475.53	85940	105.31	7885580	3304.50	5098.07	0.79	
Firozabad	534640	417.56	3490980	1661.07	146620	146.81	14124390	2641.86	4867.30	0.74	
Mainpuri	1153750	996.23	5222930	3245.96	119440	145.87	1689640	536.93	4925.00	0.76	
Shahjahanpur	5334670	3589.17	2512640	4157.88	129300	140.74	1682270	577.12	8464.91	1.44	
Kannauj	354620	395.68	2863540	1553.35	109020	190.69	10209890	3386.87	5526.58	0.87	
Auraiya	1051490	1187.66	2863540	2441.43	206810	369.23	1593900	696.90	4695.21	0.71	

Source: Sankhyikiya Patrika, 2011.\*Calculated by the Authors

District per capita income of twenty seven districts of Western Uttar Pradesh has been taken from Sankhyikiya Patrika 2011. Taking that amount as maximum limit and Rs.1000/- as the minimum, an index is prepared using the per capita value generated by main crops. The dimension index is thus-

$$\text{Dimension Index} = (\text{Actual}-1000) \div (\text{per capita income of each districts}-1000)$$



**Figure 3:** Educational Attainment Index Map of Western Uttar Pradesh

Percentage of Villages having drinking water facilities are calculated at first and then converted to dimension index. Here 10% is considered as minimum level of electrification and 100% as the maximum.

$$\text{Percentage Villages having drinking water facilities} = (\text{Villages of Drinking Water Facilities} \div \text{Total No. of Villages}) \times 100$$

$$\text{Dimension Index} = (\text{Actual}-10) \div (100-10)$$

TABLE 4: INFRASTRUCTURAL INDEX OF WESTERN UTTAR PRADESH

<i>Districts</i>	<i>% Villages of Drinking Water Facilities</i>	<i>Index</i>	<i>% Electrified Villages</i>	<i>Index</i>	<i>Infrastructural Index</i>
Saharanpur	78.41	0.76	78.35	0.76	1.52
Muzaffarnagar	87.12	0.86	86.44	0.86	1.71
Gautam Budh Nagar	91.96	0.91	83.38	0.82	1.73
Ghaziabad	93.30	0.93	93.30	0.93	1.85
Baghpat	92.06	0.91	90.79	0.90	1.81
Meerut	92.20	0.91	92.05	0.91	1.83
Mathura	83.64	0.82	80.00	0.78	1.60
Aligarh	97.52	0.97	92.81	0.92	1.89
Bulandshahar	94.30	0.94	87.64	0.86	1.80
Badaun	85.63	0.84	80.59	0.78	1.62
Agra	96.28	0.96	94.36	0.94	1.90
Mahamaya Nagar	97.62	0.97	88.69	0.87	1.85
Rampur	94.55	0.94	94.55	0.94	1.88
Jyotiba Phule Nagar	83.63	0.82	83.01	0.81	1.63
Moradabad	86.73	0.85	80.70	0.79	1.64
Bijnor	71.86	0.69	59.59	0.55	1.24
Pilibhit	89.33	0.88	68.54	0.65	1.53
Bareilly	90.10	0.89	86.91	0.85	1.74
Etawah	99.13	0.99	91.76	0.91	1.90
Etah	96.83	0.96	96.83	0.96	1.93
Kanshiram Nagar	90.95	0.90	90.95	0.90	1.80
Farrukhabad	87.69	0.86	77.16	0.75	1.61
Firozabad	97.65	0.97	89.62	0.88	1.86
Mainpuri	96.14	0.96	94.50	0.94	1.90
Shahjahanpur	89.23	0.88	78.59	0.76	1.64
Kannauj	92.15	0.91	84.97	0.83	1.75
Auraiya	92.27	0.91	82.64	0.81	1.72

Source: Calculated by the Authors from Sankhyikiya Patrika, 2011

Percentage of electrified Villages are calculated at first and then converted to dimension index. Here 10% is considered as minimum level of drinking water facilities and 100% as the maximum.

$$\text{Percentage of Electrified Villages} = (\text{Villages Electrified} \div \text{Total No. of Villages}) \times 100$$

$$\text{Dimension Index} = (\text{Actual}-10) \div (100-10)$$

After the calculation of dimension index the infrastructural index is calculated by adding both the dimension index.

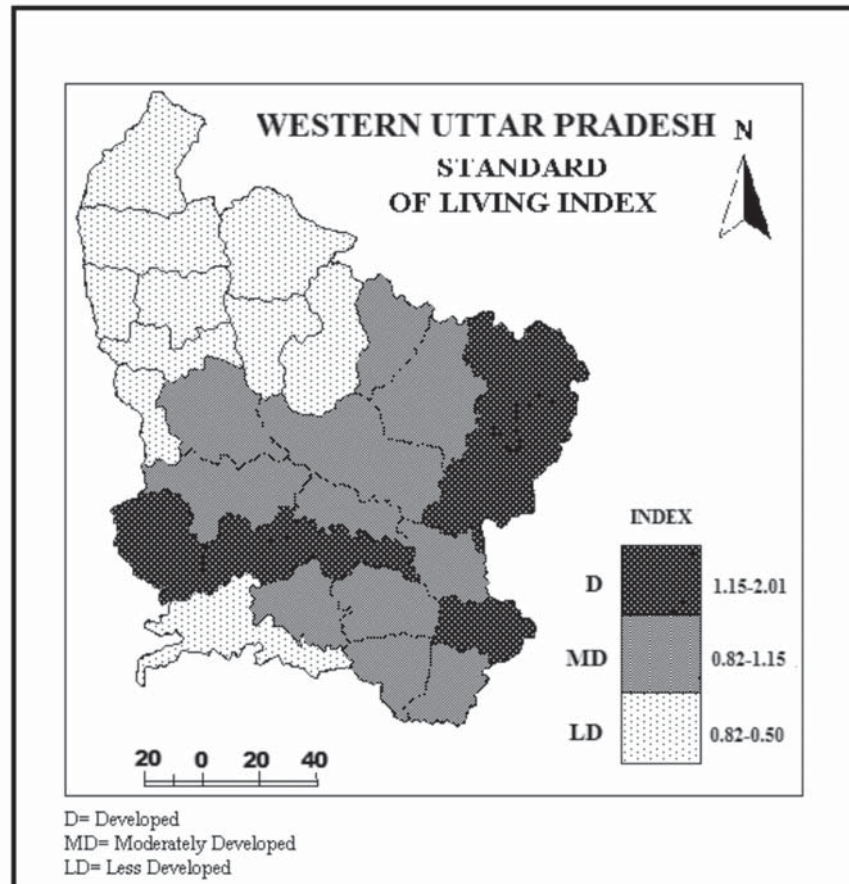
Standard of Living Index (SLI) is a combination of index of per capita value generated by main crops and the infrastructural index. Here one-third weight is given to infrastructural index and two-third weight is given to index of per capita value generated by main crops as the dependency ratio on agriculture is greater than the infrastructural condition. Here the formula is-

$$SLI = \frac{2}{3} (\text{Index of per capita value generated by main crops}) + \frac{1}{3} (\text{Infrastructural index})$$

TABLE 5: STANDARD OF LIVING INDEX FOR WESTERN UTTAR PRADESH

<i>Districts</i>	<i>Standard of Living Index</i>
Saharanpur	0.58
Muzaffarnagar	0.66
Gautam Budh Nagar	0.78
Ghaziabad	0.64
Baghpat	0.73
Meerut	0.66
Mathura	1.15
Aligarh	0.93
Bulandshahar	0.95
Badaun	1.05
Agra	0.78
Mahamaya Nagar	2.01
Rampur	1.13
Jyotiba Phule Nagar	0.70
Moradabad	0.78
Bijnor	0.50
Pilibhit	1.28
Bareilly	0.85
Etawah	1.07
Etah	1.46
Kanshiram Nagar	0.86
Farrukhabad	1.06
Firozabad	1.11
Mainpuri	1.14
Shahjahanpur	1.51
Kannauj	1.16
Auraiya	1.05

*Source:* Calculated by the Authors



**Figure 4:** Standard of Living Index Map of Western Uttar Pradesh

From the table 5 one can easily trace out that more than half of the districts are moderately and less developed in terms of standard of living. The highest and lowest scores are recorded for the districts namely Mahamaya Nagar (2.01) and Bijnor (0.50) respectively. The Districts have been classified into three groups i.e. less developed, moderately developed and developed.

- (a) **Less Developed** (below 0.82 score): Saharanpur, Muzaffarnagar, Gautam Budh Nagar, Ghaziabad, Baghpat, Meerut, Agra, Jyotiba Phule Nagar, Moradabad and Bijnor.
- (b) **Moderately Developed** (0.82-1.15 score): Aligarh, Bulandshahar, Badaun, Rampur, Bareilly, Etawah, Kanshiram Nagar, Farrukhabad, Firozabad, Mainpuri and Auraiya.

(c) **Developed** (above 1.15 score): Mathura, Mahamaya Nagar, Bijnor, Etah, Shahjahanpur and Kannauj.

TABLE 6: HUMAN DEVELOPMENT INDEX OF WESTERN UTTAR PRADESH (2011)

<i>Districts</i>	<i>Health Index</i>	<i>Educational Attainment Index</i>	<i>Standard of living Index</i>	<i>Human Development Index</i>	<i>Category</i>
Saharanpur	0.60	0.57	0.58	0.58	L
Muzaffarnagar	0.63	0.66	0.66	0.65	L
Gautam Budh Nagar	1.10	0.67	0.78	0.85	D
Ghaziabad	1.50	0.75	0.64	0.96	D
Baghpat	0.77	0.53	0.73	0.68	M
Meerut	1.05	0.67	0.66	0.79	D
Mathura	0.61	0.64	1.15	0.80	D
Aligarh	0.74	0.76	0.93	0.81	D
Bulandshahar	0.57	0.74	0.95	0.75	M
Badaun	0.45	0.49	1.05	0.66	L
Agra	0.76	0.67	0.78	0.74	L
Mahamaya Nagar	0.58	0.60	2.01	1.06	D
Rampur	0.55	0.39	1.13	0.69	M
Jyotiba Phule Nagar	0.57	0.54	0.70	0.60	L
Moradabad	0.66	0.53	0.78	0.66	L
Bijnor	0.48	0.67	0.50	0.55	L
Pilibhit	0.45	0.49	1.28	0.74	M
Bareilly	0.64	0.60	0.85	0.70	M
Etawah	0.55	0.64	1.07	0.75	M
Etah	0.49	0.58	1.46	0.84	D
Kanshiram Nagar	0.52	0.47	0.86	0.62	L
Farrukhabad	0.68	0.54	1.06	0.76	L
Firozabad	0.60	0.63	1.11	0.78	M
Mainpuri	0.53	0.63	1.14	0.77	M
Shahjahanpur	0.44	0.58	1.51	0.84	D
Kannauj	0.60	0.58	1.16	0.78	M
Auraiya	0.49	0.61	1.05	0.72	M

*Source:* Calculated by the Authors

*Note:* L= Less Developed, M= Moderately Developed, D= Developed

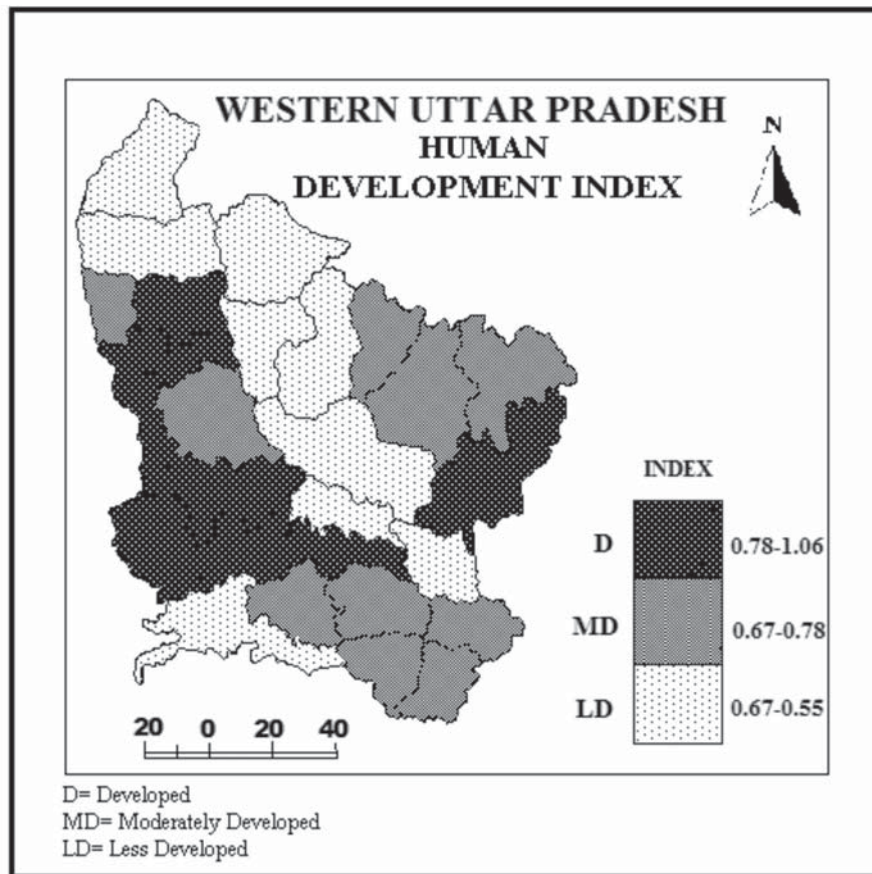
Human Development Index (HDI) is prepared with the help of above three indices, i.e. Health Index, Educational Attainment index and Standard of Living Index. The formula is-

$$HDI = 1/3 (\text{Health Index} + \text{Educational Attainment index} + \text{Standard of Living Index})$$

### Result and Discussion

With Reference to level of human development the districts of Western Uttar Pradesh have been classified into three groups, i.e. Less Developed, Moderately Developed

and Developed. Only one districts Mahamaya Nagar reaches the 1.0 score. Bijnor district score the lowest (0.55) in terms of overall human development level.



**Figure 5:** Human Development Index Map of Western Uttar Pradesh

**Less Developed Districts:** Districts scoring up to (0.55) is considered as less developed. There are nine districts in this category namely Saharanpur, Muzaffarnagar, Badaun, Agra, Jyotiba Phule Nagar, Moradabad, Bijnor, Kahshiram Nagar and Farrukhabad. Among these Bijnor districts is the most backward district in terms of human welfare and needs special attention particularly in health care as well as standard of living. These districts are situated in the northern, eastern and southern part of the study area.

**Moderately Developed Districts:** Districts with HDI between (0.82 and 1.15) are considered as moderately developed. Nine districts namely Bahpat, Bulandshahar, Rampur, Pilibhit, Bareilly, Etawah, Firozabad, Mainpuri, Auraiya



and Kannauj fall in this category. Among these district, Baghpat score lowest (0.68) in overall human welfare. This district also scores the lowest in standard of living and Education attainment Index but this district is medium in term of health care.

**Developed Districts:** Districts with HDI above (0.78-1.06) are considered as developed district namely Gautam Budh Nagar, Ghaziabad, Meerut, Mathura, Aligarh, Mahamaya Nagar, Etah and Shahjahanpur are included in this category. Mahamaya Nagar district ranks first in terms of HDI as well as Standard of Living Index and moderate in health and educational level because of Political Factor. Among these districts six are situated in the south-western part of the study area because of nearness to Delhi they are more developed than rest of the districts while Etah and Shahjahanpur are developed because of nearness to Kanpur district which is a developed district in all sectors of human welfare.

### Conclusion

The Districts situated in the south-western part of the study area are more developed as compared to the other district of the study area. Delhi plays an important role to make these districts developed in terms of all sectors of human welfare. From the foregoing discussion one may criticise the calculation process of HDI because here the economic condition of the people is not included due to non-availability of data and the index of net per capita value generated by the main crops may not be universally accepted but the present study can represent the reality very well.

This study may help to formulate appropriate policy design in order to understand and to reduce the regional inequality in respect of all sectors of human welfare. So the assessments of the state of development and identification of the lacuna in the planning process have become essential. Planners should change their properties of expenditure. Education and health along with economic status of population should be prime concern of the state government in general as well as district administration in particular.

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