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The healthcare and quality education in Uttar Pradesh across districts

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Abstract

The development in gross domestic product and per capita income is astounding when compared to India. A large portion of the economy is now devoted to manufacturing and providing services rather than farming. Disparities and inequality as they pertain to economic development and progress have long been a topic of discussion. Economists have been attempting to explain the dynamics of economic development and inequality using various economic models. We are limited in our knowledge and have little option but to proceed, even if there is a chance of making a mistake. Only 54 districts were included for the study since all newly established districts were suitably integrated according to the 1990–91 school year. For the 2000–01 and 2007–08 school years, we combined these new districts by averaging all the variables based on district population.

Keywords: Disparity, District, Uttar Pradesh, Inequality, Economic

Introduction

One hundred and eighty-five revenue districts make up the state of Uttar Pradesh. Land use planning must include an agro-climatic emphasis to make the most of the resources and growing conditions. The ideal framework for sustainable land, water, and plant usage is provided by such an approach. Ecological land categorisation, which takes into account characteristics like soil, climate, terrain, vegetation, crops, etc., was the primary inspiration for zoning. The zones were chosen because they are next to one another within the state and because, to the best of our knowledge, they have similar physical features, including climate, soil, rainfall, cropping pattern, and access to irrigation. There are nine distinct agro-climatic zones in Uttar Pradesh, each defined by its own unique rainfall, topography, and soil species. You may find the state's agro-climatic zones shown here:

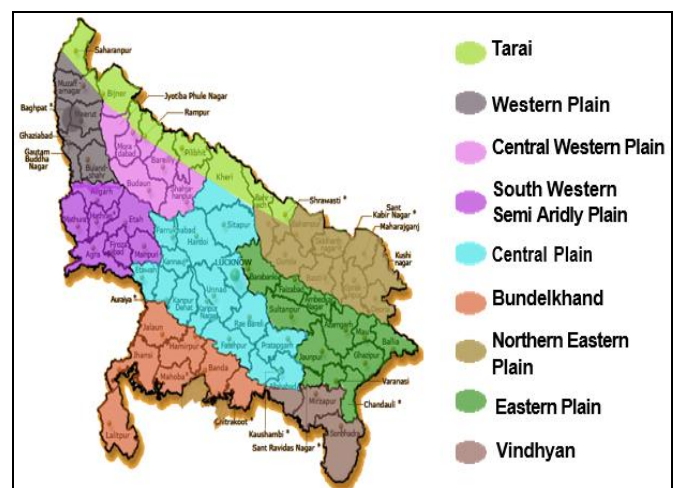


Fig 1: Agro Climatic / Ecological Zones of Uttar Pradesh

Table 1: Agro Climatic / Ecological Zones of Uttar Pradesh

Sl. No.	Agro-climatic zone	Name of Districts
1.	Tarai and Bhabar	Saharanpur, Muzaffarnagar, Bijnor, Moradabad, Rampur, Bareilly, Shahjahanpur, Pilibhit, Lakhimpur Kheri, Bahraich, Shravasti
2.	Western Plain Zone	Saharanpur, Muzaffarnagar, Shamli, Meerut, Baghpat, Gautam buddha Nagar, Bulandshahar
3.	Mid-Western Plain Zone	Bijnor, Amroha, Moradabad, Sambhal, Rampur, Bareilly, Budaun, Pilibhit, Shahjahanpur, Sitapur, Lakhimpur Kheri
4.	South Western Semi-Arid Zone	Agra, Mathura, Firozabad, Mainpuri, Aligarh, Hathras, Etah, Kasganj
5.	Central Plain Zone	Farrukhabad, Kannauj, Etawah, Auraiya, Kanpur Nagar, Kanpur Dehat, Fatehpur, Kaushambi, Prayagraj, Hardoi, Unnao, Raebareilly, Lucknow
6.	Bundelkhand Zone	Jhansi, Jalaun, Lalitpur, Hamirpur, Mahoba, Banda, Chitrakoot
7.	North East Plain Zone	Bahraich, Shravasti, Balrampur, Gonda, Siddharth Nagar, Basti, Sant Kabir Nagar, Maharaj Ganj, Gorakhpur, Kushinagar, Deoria
8.	Eastern Plain Zone	Barabanki, Ayodhya, Amethi, Sultanpur, Ambedkar Nagar, Jaunpur, Varanasi, Chandauli, Bhadohi, Ghazipur, Azamgarh, Mau, Ballia, Pratapgarh
9.	Vindhvan zone	Mirzapur, Sonbhadra, Prayagraj (Southern part)

Major Crops

Most of the soil in this area is alluvial, and it's quite rich in nutrients. In a typical year, two crops are harvested: Rabi in

the spring and Kharif in the fall. The region's primary agricultural products are sugarcane, rice, wheat, gramme, millets, and gramme.

Sl. No.	Commodity	Major Crops		
		Kharif	Rabi	Zaid
1.	Cereals	Paddy, Maize	Wheat, Barley, Rabi Maize	Maize
2.	Coarse Cereals	Bajra, Sorghum/Jowar	-	Bajra
3.	Nutri Cereals	Finger Millet, Sawan, Kodo	-	Chena, Sawan
4.	Pulses	Pigeon pea/Tur/Arhar, Urd, Moong	Gram, Lentil, Pea	Urd, Moong
5.	Oilseeds	Soybean, Groundnut, Sesame/Til	Rapeseed & Mustard, Linseed	Sunflower
6.	Commercial Crops	Sugarcane		Cotton

Literature Review

Shreyanshi Shukla *et al.* (2022) ^[1] The research relies on secondary data collected from the Indian Census that took place between 2003 and 2023. The district's gender literacy gap has been calculated using Sopher's Disparity Index (SDI) approach. The results show that gender disparities are more common in rural regions than in metropolitan ones. The research found that if rural areas had an effective adult literacy program, it might help close the gender gap in literacy and increase the district's literacy rates. This program should target females over the age of thirty and those who have dropped out of school. Another way to help close the gender literacy gap is to make sure that girls are safe and that schools have sanitary facilities.

Suranjan Majumder *et al.* (2023) ^[2] research provides a distinct and well-articulated theoretical framework for comprehending the geographical differences among the various components in diverse contexts. Using the Wroclow Taxonomy approach, we were able to calculate the Composite Index of Sustainable Regional Development and identify the model states that may benefit most from reforms. Additionally, the developed regions between states were identified using the aforementioned composite index via the use of K-means clustering techniques. Finally, this study's findings may be used by academics, planners, and politicians to create a more fair and inclusive development process, which in turn can assist to lessen the gap between states.

HN Misra and Ashutosh Mishra (2017) ^[3] There is no clear order to the processes of urbanization and development; rather, it is more difficult to determine which comes first: urbanization or regional development. The focus of this

piece is on how urbanization contributes to the growth of certain regions. Eastern Uttar Pradesh, the region under investigation, is illustrative of the norm for emerging markets. While more urbanized districts are in better shape overall, growth in the area is moving at a snail's pace, with less developed districts at the bottom.

Satish Yawale *et al.* (2021) ^[4] The researchers in this study set out to compare and contrast the energy consumption habits of urban and rural Indian families throughout time. The research discovered that homes with higher incomes are seeing a quicker energy shift, and that cooking is the function that consumes the most energy overall. Cleaner, more energy-efficient fuels for cooking and lighting are becoming more common as cities continue to grow in population. In high-income families, electricity and liquefied petroleum gas (LPG) are gradually displacing biomass and paraffin as the primary energy sources for their homes. This article takes a close look at all of India's states, breaking down service types, consumption trends, and the advanced energy usage gap between rural and urban households.

Materilas and Methods

This research aims to construct appropriate indices using acceptable variables to quantify the degree of the health attainment and educational attainment difference in the state of Uttar Pradesh. From one state district to the next, the indications are unique and varied. The variables' district-level data have been selected with the information availability in mind. To start, there are a lot of health and education indicators, but their data comes from all over the place, so it's not easy to integrate them all together to make

a composite score. The fact that this research seeks to examine health and educational disparities across various eras adds another layer of complexity. This is due to the fact that data provided by these agencies is subject to frequent definition and coverage changes, which makes it impossible to utilise data from different time periods without incurring significant mistake.

Second, using 1990–91 and 2007–08 as benchmark years, the research aims to compare regional variance. Data is most recently available for the academic year 2007–2008, while the reform era's watershed year was 1990–1991. A large number of new UP districts were established between 1990–91 and 2007–08. While most occurrences involve splitting large districts in half to create two new ones, there have been isolated instances when a third district was formed from the merger of two larger ones. The best approach for establishing comparisons as we attempt to recreate the 2007–2008 districts would have been to get data for individual blocks and then combine them together to get a number for the whole previous district. We will now

combine data from new districts into the old one, assuming that these districts are subsets of the prior one, since we had to abandon this strategy owing to a lack of relevant block-level data. This will allow us to access information about the old district.

Data analysis

Unequal Access to Healthcare and Quality Education Across Uttar Pradesh's Districts

UP is a massive state, therefore it's not surprising that there's a wide gap across districts when it comes to many indicators of human and development progress. The current study uses the factor loadings from Tables 2 and 3 to determine the degree of health and educational achievement discrepancy across districts. Health-For the years 1990–1991 and 2022–23, we used the aforementioned factors to create an index that gives us a sense of the state's health facility level across all of its districts. The results are displayed in Table 2. Some conclusions can be drawn from table 2 with relative ease.

Table 2: Composite Indices of Health & Educational Attainment

S N	District	Composite Index of Health Attainment				Composite Index of Educational Attainment			
		1990-91		2022-23		1990-91		2022-23	
		Index	Rank	Index	Rank	Index	Rank	Index	Rank
1	Saharanpur	0.3656	51	0.1451	52	0.7939	33	4.4358	15
2	Muzaffarnagar	0.4130	47	0.3278	45	0.7446	34	4.1388	19
3	Bijnor	0.5443	38	0.1953	50	0.6374	40	1.1569	43
4	Moradabad	0.3771	50	0.2798	49	0.5223	41	0.6873	51
5	Rampur	0.5793	35	0.3637	43	0.0997	52	2.0310	37
6	Meerut	0.2601	53	0.3185	46	1.6910	5	4.4733	13
7	Ghaziabad	0.4356	45	0.3179	47	1.6919	4	4.5623	9
8	Bulandshahar	0.6112	30	0.6859	23	1.1583	16	3.5088	30
9	Aligarh	0.5076	41	0.4337	38	1.4259	9	4.5888	7
10	Mathura	0.5716	36	0.6031	26	1.1134	17	4.4891	12
11	Agra	0.4319	46	0.1186	53	1.0248	23	4.4946	11
12	Firozabad	0.3778	49	0.3082	48	1.0421	15	3.9184	23
13	Etah	0.3613	52	0.1683	51	0.8183	30	3.6108	28
14	Mainpuri	0.4768	42	0.5513	30	1.0661	19	4.5897	6
15	Budaun	0.5877	34	0.3703	42	0.0261	54	2.1616	36
16	Bareilly	1.0036	12	0.7347	19	0.3938	45	0.9439	45
17	Pilibhit	1.0706	9	1.1178	6	0.1960	50	1.2058	42
18	Shahjahanpur	0.9485	14	0.8827	12	0.2026	49	3.3045	32
19	Farrukhabad	0.6082	31	0.5247	33	1.2541	12	1.3933	39
20	Etawah	0.5112	40	0.7870	15	2.6047	1	4.7488	3
21	Kheri	0.6055	32	0.4180	40	0.2142	48	1.0745	44
22	Sitapur	0.6993	21	0.4921	34	0.2950	46	3.2324	33
23	Hardoi	0.6361	28	0.6179	25	0.5153	42	0.8594	48
24	Unnao	0.8534	17	0.7414	18	0.6665	37	3.9469	21

25	Lucknow	1.4719	2	0.7272	20	1.4585	7	4.7054	4
26	Rae Bareli	1.1773	7	1.1339	5	0.6374	39	3.6706	26
27	Kanpur Dehat	0.6013	33	0.7681	17	1.2161	13	4.5752	8
28	Kanpur Nagar	0.6755	24	0.1181	54	1.6789	6	4.9251	1
29	Fatehpur	0.5598	37	0.7055	22	0.9304	28	3.4021	31
30	Barabanki	0.6731	25	0.4464	37	0.1852	51	0.7534	50
31	Jalaun	1.4181	4	1.3498	2	2.1553	2	4.8634	2
32	Jhansi	1.0810	8	0.8264	14	1.7298	3	4.6308	5
33	Lalitpur	2.2708	1	1.7863	1	0.2675	47	1.3543	41
34	Hamirpur	1.0291	11	1.1069	7	1.3218	11	1.3606	34
35	Banda	1.0529	10	1.1805	4	0.8484	29	4.0110	20
36	Pratapgarh	0.9733	13	0.9606	9	0.8096	32	4.3594	16
37	Allahabad	0.6664	26	0.3584	44	1.4383	8	4.1700	18
38	Faizabad	0.7389	20	0.7130	21	1.0956	18	3.5431	29
39	Sultan	0.6860	23	0.6680	24	0.7131	35	4.2684	17
40	Bahraich	0.6358	29	0.5674	29	0.0846	53	0.3378	54
41	Gonda	0.5421	39	0.4752	35	0.3988	44	0.5144	53
42	Siddharth	0.6374	27	0.9388	10	0.4993	43	3.1622	40
43	Basti	0.7449	19	0.5507	31	1.2145	14	0.8744	47
44	Mahrajani	0.2464	54	0.3957	41	1.2145	38	0.5962	52
45	Gorakhpur	0.4060	48	0.4634	36	1.0514	21	0.7988	49
46	Deoria	0.4731	43	0.5406	32	0.7131	15	1.9203	38
47	Azamgarh	0.6983	22	0.5800	28	0.8177	31	3.8883	24
48	Mau	0.8636	15	0.8387	13	0.9896	24	3.6609	27
49	Ballia	1.3472	5	1.2596	3	0.9549	25	3.9286	22
50	Jaunpur	0.4533	44	0.4219	39	0.9545	26	3.8750	25
51	Ghazipur	0.8469	18	0.7813	16	0.9437	27	4.4585	14
52	Varanasi	0.8586	16	1.0833	8	1.3425	10	4.5322	10
53	Mirzapur	1.4347	3	0.6009	27	1.0620	20	2.9299	35
54	Sonbhadra	1.2459	6	0.8844	11	0.6766	36	0.9412	46
a.	Mean	0.7472		0.6432		0.9185		3.0476	
b.	S.D.	0.3719		0.3424		0.5337		1.5371	
c.	C.V.	49.77183		53.226550		58.105		50.438	
				6		6		4	

The first is the dismal situation of health achievement as a whole. The index's value has been steadily falling over the years and is now rather low. From 1990–1991, the indicator of health achievement was 0.7472; from 2022–2023, it dropped to 0.6432. The state should be quite concerned about this.

As a second point, the gap between districts in terms of health care facilities and achievement has grown somewhat. In 1990–1991, the health indicators' coefficient of variation was 49.77; in 2022–2023, it rose to 53.22. Although there was a decrease from 34 to 29 districts performing below the state average between 1990–1991 and 2022–2023, the gap between the top and worst performing districts has widened. During the 1990–1991, Maharajganj was rated bottom in the East while Meerut was placed worst in the West. The index for Maharajganj, the lowest rated city, was 32% of the state average and only around 11% of Lalitpur, the highest ranked city. By 2022–2023, the disparity between the best-performing, average, and worst-performing districts had grown substantially. Last place went to the Kanpur Dehat district, whose index value was 6.61 percent below that of the top districts and 18.0 percent below the average for the

whole state.

Third, the index value has been steadily rising, although at a modest pace, across the board. While most districts have changed, Agra, Badaun, Kheri, Barabanki, Jhansi, Allahabad, Basti, and Mirzapur have remained unchanged. According to Table 3, there are a few districts around the state that have shown consistent success. We have established a standard where a drop of five places or more in the rank is considered a significant decline and a rise of five places is considered a great improvement. That is why we say that a district is in the high improvement class if its rank goes up five spots or more. According to the projected index values reported by district, seven districts-Ghaziabad, Farrukhabad, Sone Bhadra, Sultanpur, Faizabad, Unnao, and Saharanpur-saw a significant fall in their position. Distinct districts' health development levels have changed dramatically, both upwards and downwards. While changes in district rankings relative to any given metric over time are par for the course, the shift in Uttar Pradesh's instance has been particularly dramatic. An explanation becomes quite tough to provide due to the huge shift in rank of some districts. This proves two things: (i) the state has not

consistently pursued a policy to raise health attainment levels across the board; rather, the policies of the government are ad hoc and subject to change; and (ii) various factors contribute to the rise and fall of different districts. These variables may be categorised as either

completely political (where one political party's administration prioritizes one set of districts over another) or simply economic (where some districts have more pulling power due to their significance in the state's economy).

Table 3: Differential Health and Educational Outcomes by Region

Regions	Composite Indices of Health Attainment				Composite Indices of Education Attainment			
	1990-91		2022-23		1990-91		2022-23	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Western	0.5521	4	0.4617	4	0.9253	2	3.2992	2
Central	0.7953	2	0.6169	3	0.7797	4	3.1145	3
Bundelkhand	1.3704	1	1.2500	1	1.2646	1	3.2440	1
Eastern	0.7631	3	0.6885	2	0.8934	3	2.7768	4
State Average	0.8702		0.7543		0.9185		3.0476	
C. V.	40.272		45.577		21.620		7.5393	

Table 3 shows that the inter-regional gap in health facilities has grown throughout the 18-year period (1990–91 to 2022–23), which brings us to our fourth point. The Bundelkhand area has the highest index value in both years, whereas the western region has the lowest index value throughout the same time period. However, Bundelkhand's standing is deceiving since the area does very low on measures of economic growth. Actually, the state and federal governments have invested heavily on Bundelkhand's healthcare and education infrastructure due to political considerations.

This area so excels when evaluated by the accessibility of healthcare facilities. When service providers, in this case government officials and staff, don't care enough to prioritise improving the area's infrastructure, it doesn't matter how advanced that infrastructure is if the locals either don't know how to utilise it or can't afford to bother. This discovery severely limits the usefulness of any exercise that tends to use infrastructure availability as a measure of achievement. During that time, the eastern area's standing improved in comparison to the centre region. There is a lot of proof that the changes in Uttar Pradesh have made regional disparities worse. Correlations between the index of health attainment and other variables also grew throughout that time. It increased from 40.27 to 45.57. Education-This study also aims to quantify the gap in educational achievement across districts. A key component of a flourishing economy is investment in education. There is a two-way street in the link between education and economic growth: first, educational attainment strongly influences economic growth rates, and second, education level is dependent on both levels and rates of economic growth. Here are the main conclusions about educational attainment to start, when looking at educational achievement as a whole, the state is doing a very poor job. Although the index has grown over the years, its value remains modest. From 1990–1991, when it was 0.9185, the

educational attainment index jumped sharply to 3.0476 in 2022 - 23.

Intra-State Economic Disparity in Uttar Pradesh

India has one of the fastest growing economies and the highest concentration of the world's impoverished (17%), yet it is also a major player in international development (World Bank, 2013). The Indian economy expanded slowly until the 1980s. In the first 30 years, from the 1950s to the 1980s, GDP grew at a pace of 3.6%; in the 1980s, that rate increased to 5.6%. Since the country's revolutionary transition towards deregulation and liberalisation in 1991 brought about significant changes to the economy, India has entered a new period of extraordinary economic growth. From 1991–1996 and 2003–2007, India's economy grew at a quicker rate than any other country, with 6.7% and 8.7% annual GDP growth rates, respectively. The growth rate slowed to 5.6% in 2012 after the economic crisis of 2008, but the economy began to rebound in 2013 and 2014, with a few bumps along the way. The percentage of the poor dropped from 45.3% in 1993–1994 to 21.9% in 2012, thanks in large part to this economic boom, which is widely believed to have significantly reduced severe poverty (Planning Commission, 2013). India was ranked 147th out of 157 nations in an Oxfam study on inequality (2018), suggesting a lack of dedication to reducing inequality. The fact that India's number of billionaires rose from 13 in 2004 to 136 in 2020 is indicative of the country's extreme inequality.

Despite this troubling trend, economists and policymakers continue to retain the view that inequality is likely to expand during periods of rapid economic expansion before levelling off. People in developing nations like India don't accept Kuznets' theory on its face because of the tremendous interpersonal, sociocultural, religious, and geographical disparities that exist there. Income inequality in India worsened between 1983 and 2014, with the top 1% seeing a

rise from 6% to around 23% of the population's total income, while the poorest 50% saw a decline from 24% to about 16%, according to the World Inequality Report (2018). This data points to the fact that Kuznets' Curve has not yet reached its next stage in the Indian economy. The

difference between sectors and regions has only grown as India's economy has progressed. The data points to a persistent and, worse, rising regional disparity since independence.

Table 4: Regional differences in gross state product in Uttar Pradesh in 2022–23

Regions	Primary	Secondary	Tertiary	Total	Per Capita Income (Rs.)
Western	23.72	25.21	51.06	100	28,324
Central	19.54	20.79	59.67	100	22,632
Bundelkhand	31.48	14.2	54.31	100	26,805
Eastern	23.21	17.72	59.07	100	16,522
Uttar Pradesh	23.26	21.54	55.2	100	22,459

While researchers have focused heavily on the degree of inequality between India's individual states, they have paid far less attention to the intra-state gap, which is significant at the sub-regional level but has a less aggregate impact. This research aims to fill this knowledge gap by studying the demographics, socioeconomics, and economic impact of Uttar Pradesh, a major state in India, to gain a better understanding of the type and magnitude of inequality at the sub-provincial level. At almost 17% of India's total population, 199.8 million people call the state of Uttar Pradesh home, making it the most populous in the nation. However, since 1991, the GDP of Uttar Pradesh has been expanding at a significantly quicker rate.

Conclusion

Uttar Pradesh's demographics are dynamic and subject to change due to a multitude of variables. The Indian state with the most population is Uttar Pradesh. Among the many demographic characteristics that contribute to a complete picture of a population is its age distribution. Uttar Pradesh would come in at number five on a list of the world's states based on population, only behind the US, China, India, and Indonesia. A total of 19.96 crores were recorded in the 2023 census. The population of Uttar Pradesh is huge and growing rapidly. From 1991 to 2003 and 2003 to 2023, its population grew by more than 25.90 percent and 20.08 percent, respectively. Taking part in any economic productive activity, whether for pay or not, is considered work. This involvement could be of a mental or bodily kind. Managing and directing work effectively is an integral part of job, as is doing the actual work. Remember that the activity's primary goal should be to generate economic value.

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