Comparative analysis of the distribution of Higher Educational Institutions (HEIs) in India and Policy Recommendation

Kokila Meena[1]

ABSTRACT

Education is a foundational pillar for individual empowerment, societal progress, and national development. As a constitutionally guaranteed right, education must be inclusive transcending boundaries of gender, caste, religion, region, language, and physical appearance. A nation's advancement is inextricably linked to the strength of its educational ecosystem. Echoing the vision of the Dr. S. Radhakrishnan Commission (1948), quality education fosters economic growth, political engagement, and sociocultural cohesion.

This article investigates the evolving landscape of higher education in India through three interrelated lenses: (i) the spatial and structural disparities shaping regional access and equity in higher education; (ii) a comparative evaluation of the distribution and density of Higher Educational Institutions (HEIs) across states; and (iii) an assessment of governance challenges with policy recommendations aimed at promoting equitable development. The analysis engages with complex phenomena such as the backwash effect, brain drain, regional polarization, and concentration effect, highlighting the urgent need for strategic decentralization and inclusive reforms in educational planning.

Keywords: Backwash Effect, Brain Drain, Regional Polarization, Concentration Effect, Cooperative Federalism, Inclusive Education, Higher Educational Institutions (HEIs), Regional Disparities, Education Policy Reform

INTRODUCTION

Education is comprehensively recognized as an important investment in building human capital and human resources (Tilak, 2017; Singh, 2022). This article embarks on a comprehensive exploration of higher education's evolution, spanning epochs from antiquity to contemporary times. Acknowledging development as a dynamic force shaping both society and educational paradigms, the narrative unfolds across meticulously delineated sections: firstly, an examination of local disparities in the evolution of higher education in India; secondly, a comparative analysis of the distribution of Higher Educational Institutions (HEIs) in India; and finally, a conclusion with policy recommendations.

The growth of higher education engenders both concentration effects and "backwash effects" (Kolhatkar, 2015; Arbo & Benneworth, 2007). When a specific region within a country experiences development, it leads to the enrichment of human capital (skilled and trained individuals) as well as physical capital (financial resources, machinery, and infrastructure), while other regions may experience a decline as talent and capital are drawn towards the burgeoning developed areas (Raveendranath, 2020).

The unequal distribution of resources causes concentration effects; it leads to effects on other regions (developed, underdeveloped, less developed). Economic growth and development depend on efficiency and the use of knowledge in production, productivity, adoption of new technologies, creativity, and innovations (Kumar, 2020; Vergis, 2019). Beyond the conventional industrial centres, regions characterized by burgeoning progress and innovation—termed "techno poles" or "techno polis" by scholars like Castells and Hall began to emerge. The techno polis concentrates on intensive knowledge production, research, and development. The phenomenon is closely intertwined with universities, acting as breeding grounds for talented individuals who contribute new ideas and innovative solutions to the market (Ghosh, 2020). However, the concentration effect leads to an uneven distribution of resources, resulting in certain regions enjoying greater growth advantages while others lag behind, exacerbating regional polarization.

[1] ✉ Assistant Professor, University of Delhi, kokilameena@satyawati.du.ac.in.

Moreover, distance plays a crucial role in determining access to facilities and ensuring equal opportunities for all in development efforts. For many, especially those from marginalized communities such as Scheduled Castes (SC), Scheduled Tribes (ST), and minorities, the prospect of traveling long distances for higher education presents both a social barrier and an economic burden, hindering their access to educational opportunities (Sedwal & Kamat, 2008; Wadia, 2022).

Table 1: Higher Education Expansion: Institutions & Enrolment

Year	Central Universities	State Universities	Deemed to be Universities	Institutes of Nation Importance	Private Universities	Total	Colleges	Enrolment (in million)	GER %
1950-51	3	24	-	-	-	27	578	0.2	
1960-61	4	41	2	2	-	49	1819	0.6	1.5
1970-71	5	79	9	9	-	102	3277	2	4.2
1980-81	7	105	11	9	-	132	4577	2.8	4.7
1990-91	10	137	29	9	-	185	6627	4.4	5.9
2001-02							11146	8.8	8.1
2005-06	18	205	95	18	7	343	17625	11.6	12
2011-12	43	299	128	59	105	634	34852	29.2	21
2012-13	43	305	127	62	122	659	35525	30.2	22
2013-14	43	322	127	68	154	714	36634	32.3	23
2014-15	44	329	122	75	182	752	38498	34.2	24
2015-16	44	342	122	75	198	781	39071	34.6	25
2016-17	45	358	122	100	234	859	40026	35.7	25

Source-Ministry of Home Affairs, Government of India.
Census of India, 2001 C- *Series Socio- Culture Tables.*
Census of India, 2001, Paper 1, *Supplement District Totals.*
Census of India, 2001, *Primary Census Abstract*.
Census 2020, *RUSA* 2015, principal secretary in higher technical Sanskrit Education Ministerial of tribal India 2014

University admissions and opportunities for higher education given the uneven distribution of resources across regions make distance learning a significant and essential component of pursuing a university education. There were fewer colleges, universities, centres, and other establishments devoted to higher learning. They were restricted to a few specific regions. During this defined period, elite students who could afford to live away from home and travel long distances were the only ones with secure access to higher education (Kolhatkar, 2012).

The creation of private universities was permitted in India throughout the first ten years of the current century. As a result, private sector-owned colleges and universities grew in India. As indicated by Table 1, which has 35.7 million enrolments, 40,026 colleges, 859 universities, and a GER of 25.2% for the 2016–17 academic year (Ministry of Human Resource Development, 2020). In addition to having the second-largest higher education system in the world, India is also at the stage of mystifying higher education (Kumar, 2020; Vergis, 2019).

Higher education expansions, institutions and enrolment from 1950 to 2016–17.

When we go through and see progress of central, state, private universities, deemed, there is continuous change accrued. From 1950, only three central universities were there, 24 state and no deemed universities, no private universities, and colleges were 578. Total enrolment was 0.2 percent and GER not available. In 1960–61, total number of colleges was 1819 and enrolment 0.6 percent and GER was 1.5 percent. Changes accrued from 2005–06: colleges were 17,625 and enrolment was 11.6 percent and GER was 12 percent. In 2015, enrolment was 34.6 percent and GER was 25 percent, and number of colleges was 390,171. With the help of table we can see the progress from 1950–2016 in terms of college, private, state, deemed universities and enrolment and progress of GER (Vergis, 2019; Varghese, 2015).

Consequently, there was a decline after the 1970s in the growth of public institutions, student enrolment and allocation of resources to higher education. The number of private aided colleges increased and share in enrolment in the 1970s. "Private colleges that were legally private but publicly financed dominated the higher education landscape until 1980" (Sinha, 2018).

Indeed, Andhra Pradesh, Karnataka, Tamil Nadu, and Maharashtra have been at the forefront of the private higher education movement in India. Starting around the year 2000, the establishment of private universities provided a significant impetus to the growth of the private sector in higher education across the country. Over the period from 2001 to 2016, approximately 198 private institutions were established in India, marking a notable expansion of private participation in the higher education sector. These private universities and colleges have played a crucial role in facilitating India's rapid expansion in higher education, contributing substantially to the overall growth and development of the sector (Varghese, 2015; Vergis, 2019).

India is witnessing a noticeable shift in its higher education landscape, from one traditionally dominated by public institutions to a framework increasingly reliant on the private sector. Currently, over 60 percent of enrolments occur in privately managed colleges and universities. However, premier institutions often remain geographically concentrated in select regions, imposing steep travel and living expenses that render them inaccessible to many. This dynamic creates not just physical but economic distances, disproportionately affecting marginalized groups such as Scheduled Castes (SCs), Scheduled Tribes (STs), and minority communities (Sinha, 2018).

Tackling regional imbalances in the availability of HEIs and expanding educational access for socially disadvantaged groups is imperative. Public policy plays a crucial role in reshaping the spatial logic of educational opportunity. Communities located far from urban centres, including non-traditional learners and socioeconomically excluded groups, frequently prefer local colleges over distant campuses. This behavioural tendency termed the “distance discount”, reflects both practical and equity concerns and is essential for any strategy aimed at democratizing higher education (Spiess & Wrohlich, 2010; Hussain, McNally, & Telhaj, 2009).

Hussain et al. (2009) argue that geographic accessibility of HEIs has long-term effects on income potential, especially for graduates of elite institutions. The “distance discount” not only lowers costs but enhances affordability and participation among low-income households, thereby reinforcing the need for deliberate policy interventions that geographically redistribute high-quality institutions.

Drawing on the work of Hallak and Varghese, locational planning emerges as a key instrument for rectifying inequities in the distribution of educational infrastructure. Urban-centric clusters of HEIs reflect broader systemic biases where infrastructure, transport, and financial resources converge to draw students into metropolitan spaces. Students from financially stable families are better equipped to pursue studies away from home, often residing in hostels and accessing institutional amenities.

A spatial analysis of HEIs, especially in states like Rajasthan, reveals uneven clustering at the district level, with marked disparities in technical and general educational facilities. Studies aimed at mapping such distributions provide actionable insights into where oversupply and undersupply exist—enabling targeted planning to close regional gaps and ensure a more equitable educational architecture (Sinha, 2018).

Concentration Ratio

To assess the distribution of Higher Educational Institutions (HEIs) across various regions relative to the population aged 18–23, an OECD study examined variables such as regional unemployment levels and overall area size, as analysed by Spiezia (2007). The concentration ratio was determined by comparing the proportion of HEIs to the percentage of the total population in the 18–23 age group. This ratio serves as a useful metric for identifying regions with either an excess or a deficit of advanced institutions. While the All India Survey on Higher Education (AISHE) provides Gross Enrolment Ratio (GER) at the state level, Census data lacks such granularity. Consequently, GER was calculated for all 28 states and eight Union Territories, as well as their 640 respective districts, using Census 2011 data (AISHE, 2019–20; Census of India, 2011). This approach yielded a comprehensive dataset showcasing GER in higher education at the district level. Gross Enrolment Ratio is computed as:

GER = Total population attending HEIs (across all ages) / Total population (aged 18–23) × 100
Average size of population = Total population attending HEIs (across all ages) in a locality / Total number of HEIs in that locality

The concentration ratio (CR) was examined in conjunction with several variables, including literacy rates, male and female literacy rates, Gross Enrolment Ratio (GER), and the proportion of the urban population. It was observed that the average size of institutions exhibits a negative correlation with the CR, whereas the GER displays a positive correlation with the CR. Two distinct relationships were identified between the CR and GER. Firstly, in instances where the usual size of organizations falls below the state portion and the CR is low, indicating a scarcity of HEIs, the GER tends to be low as well. Conversely, when the average size of institutions surpasses the state average and the CR remains low—indicating a shortage of HEIs and a low GER, this signals a necessity for forming additional HEIs in the district to address the rising demand for higher education (AISHE, 2013; AISHE, 2019–20; Spiezia, 2007).

Scheduled Castes & Scheduled Tribes Highlights

The following seven states account for roughly 72% of the rural SC population: Andhra Pradesh, Bihar, Maharashtra, Rajasthan, Uttar Pradesh, and Madhya Pradesh. Seventy percent of India's tribal population lives in rural areas and is comprised of Odisha, Gujarat, Maharashtra, Madhya Pradesh, Chhattisgarh, Jharkhand, and Rajasthan. Since 1991, the decadal growth rates of all the social groups in SC and ST have been declining, with a more noticeable fall in SCs than in the other groups. In comparison to the general growth rate, the decadal growth rate of SC is fewer by roughly 2 percentage points, and the decadal growth rate of ST is less by 3.66 percentage points (Statistics of School Education, 2011–12).

The differences in literacy levels between genders persist across all social classes. However, there has been notable progress, particularly in the literacy rate among females within Scheduled Castes (SCs), which has shown a faster growth rate compared to Scheduled Tribes (STs). Interestingly, states like Kerala, Assam, Bihar, and Uttarakhand exhibit similar literacy rates among SCs and STs, indicating a narrowing gap in educational attainment.

Despite improvements, the number of drop-out students remains high, although there has been a decrease in the dropout rate over time. At the primary stage, gender disparities have seen a decline, reflecting efforts to promote equal educational opportunities. Additionally, the gross enrolment rates for the academic year 2011–12 show higher figures among SCs compared to STs, suggesting relatively better access to education for the former group (Statistics of School Education, 2011–12). These trends highlight both progress and ongoing challenges in achieving educational equity across different demographic groups.

At the state level, an analysis was conducted considering various education-related variables such as literacy rate, urbanization rate, the proportion of the population (both total and within the 18–23 age group), the presence of HEIs including both private and public institutions, the average size of these institutions, and the GER. The analysis revealed diverse scenarios regarding the concentration of HEIs across different states. Some states exhibited an oversupply of HEIs, suggesting that there are more institutions relative to the population's educational needs. Conversely, other states faced an undersupply of HEIs, indicating a shortage of institutions to cater to the

population's educational demands adequately. Furthermore, certain states demonstrated a concentration of HEIs in specific regions, leading to disparities in access to higher education opportunities (AISHE, 2019–20).

These findings highlight the importance of addressing regional disparities in the distribution of HEIs to ensure equitable access to quality higher education for all individuals across the country. By identifying areas with underserved populations, policymakers can take targeted measures such as establishing new institutions or expanding existing ones to bridge the gap and promote inclusive educational development. The significant variation in literacy rates across states underscores the influence of state-level policies, socioeconomic factors, and historical context on educational outcomes. States like Kerala, with high literacy rates, often prioritize education and invest in human capital development, leading to better educational outcomes. On the other hand, states like Bihar, with lower literacy rates, may face challenges such as limited access to quality education, poverty, and sociocultural barriers.

The positive correlation between overall literacy rates and female literacy rates in states like Kerala, Lakshadweep, and Goa reflects the effectiveness of gender-inclusive educational policies and initiatives. Investments in girls' education, awareness campaigns, and social reforms aimed at promoting gender equality contribute to higher female literacy rates in these regions. Similarly, the positive correlation between overall literacy rates and GER in higher education indicates the importance of foundational education in facilitating access to higher education. Regions with higher literacy rates often have a better-educated populace, which fosters a culture of learning and encourages greater participation in higher education. Additionally, higher literacy rates may correlate with improved socioeconomic conditions, making higher education more accessible to a larger segment of the population.

At the district and national levels, this correlation suggests that efforts to improve literacy rates can have a cascading effect on higher education enrolment, leading to broader social and economic benefits. Therefore, policies aimed at enhancing literacy rates, promoting gender equality in education, and expanding access to higher education can contribute to overall socioeconomic development and human capital formation across regions.

Additionally, the female literacy rate displays a significant correlation with GER, underscoring the crucial role of female education in driving higher educational attainment levels. This emphasizes the importance of implementing policies and initiatives aimed at promoting literacy and education, particularly among women, to enhance overall participation in higher education. These results strengthen the argument that educated parents are more likely to send their children to schools and higher education institutions than their illiterate counterparts.

CONCLUSION

By addressing these issues and implementing targeted strategies, India can work towards creating a more equitable, inclusive, and high-quality higher education system that provides opportunities for all its citizens, irrespective of their circumstances or location. This analysis employed Census 2011 data to investigate the geographic distribution of Higher Educational Institutions (HEIs), aiming to uncover regional disparities in both general and technical HEIs. Discrepancies in overall literacy rates, Gross Enrolment Ratio (GER), the proportion of urban population, the prevalence of private HEIs, and the availability of HEIs, in comparison to the population share and average size of existing HEIs across different regions, contribute to the exacerbation of inequality between regions in India (Census of India, 2011; AISHE, 2019–20).

REFERENCE

All India Survey on Higher Education (AISHE). (2019–20). *All India Survey on Higher Education 2019–20*. Ministry of Education, Government of India. https://ruralindiaonline.org/en/library/resource/all-india-survey-on-higher-education-aishe-2019-20/

Arbo, P., & Benneworth, P. (2007). *Understanding the regional contribution of higher education institutions: A literature review* (OECD Education Working Papers No. 9). OECD Publishing. https://doi.org/10.1787/161208155312

Census of India. (2011). *Primary census abstract: India*. Office of the Registrar General & Census Commissioner, Government of India. https://censusindia.gov.in/

Ghosh, A. K. (2020, September 17). *The paradox of "centralised federalism": An analysis of the challenges to India's federal design*. Observer Research Foundation. https://www.orfonline.org/research/the-paradox-of-centralised-federalism-272/

Kolhatkar, M. R. (2012). *Education and federalism in India*. Rawat Publications.

Kolhatkar, M. R. (2015). Evolution of India's federalism and education policy. *Economic and Political Weekly, 50*(26–27), 7–8. https://www.jstor.org/stable/24482553

Kumar, K. (2020, November 3). *Education, the nation and the States*. The Hindu. https://www.thehindu.com/opinion/op-ed/education-the-nation-and-the-states/article33000180.ece

Ministry of Human Resource Development. (2012). *Statistics of school education 2011–12*. Bureau of Planning, Monitoring & Statistics, Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/statistics/SSE1112.pdf

Ministry of Human Resource Development. (2013). *All India Survey on Higher Education (AISHE), 1999–2015*. Department of Higher Education, Government of India.

Ministry of Human Resource Development. (2020). *National Education Policy 2020*. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Ministry of Human Resource Development. (2021). *All India Survey on Higher Education (AISHE) 2019–20*. Government of India. https://ruralindiaonline.org/en/library/resource/all-india-survey-on-higher-education-aishe-2019-20/

Raveendranath. (2020). *New Education Policy 2020: A policy refuting federalism and diversity*. Peoples Democracy. https://peoplesdemocracy.in/2020/0802_pd/new-education-policy-2020-policy-refuting-federalism-and-diversity

Saxena, R. (2021). The working of cooperative and collaborative federalism in India: Understanding intergovernmental relations. *Indian Journal of Public Administration, 67*(2), 153–164. https://doi.org/10.1177/00195561211027984

Sedwal, M., & Kamat, S. (2008). *Education and social equity: With a special focus on Scheduled Castes and Scheduled Tribes in elementary education* (CREATE Pathways to Access Research Monograph No. 19). NUEPA. https://www.create-rpc.org/pdf_documents/PTA19.pdf

Singh, M. P. (2022, February 5). *Federalism in India*. SAGE India.

Spiezia, V. (2007). *Geographic concentration & territorial disparity in OECD countries*. OECD Territorial Indicator Unit. https://www.researchgate.net/publication/266340560_Geographic_Concentration_Territorial_Disparity_in_OECD_countries

Tilak, J. B. G. (2017). India: The unfulfilled need for cooperative federalism: Union–State relations in India's higher education. In M. Carnoy, I. Froumin, O. Leshukov, & S. Marginson (Eds.), *Higher education in federal countries: A comparative study* (pp. 307–334). Sage Publications / NUEPA.

Vergis, N. V. (2019). *Reviving higher education in India*. Brookings India. https://www.brookings.edu/articles/reviving-higher-education-in-india/

Verma, H., & Kumar, A. (n.d.). *New Education Policy 2020 of India: A theoretical analysis*. Forex Publication.

Wadia, L. C. (2022, January 8). *Implementation of the new National Education Policy 2020: An assessment*. Observer Research Foundation. https://www.orfonline.org/expert-speak/implementation-of-the-new-national-education-policy-2020-an-assessment/.