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AN EMPIRICAL STUDY ON EXAMINING THE INFLUENCE OF PUBLIC SPENDING ON EDUCATION ON POVERTY LEVELS IN SEVERAL STATES OF INDIA

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ABSTRACT

Education is regarded as a "investment" in conventional economics. Research conducted on the economic benefits of education at an international level indicates three key findings. Firstly, education is considered to be one of the most advantageous investments that developing countries can make. Secondly, the economic returns on education are most significant at the primary schooling level and decrease as the level of education increases. Lastly, it has been observed that female education yields higher economic returns compared to male education. Research conducted on India yields comparable findings. For example, research conducted in Andhra Pradesh revealed that individuals with primary education earn twice as much as those who are illiterate. Primary education increases individual earnings by 20 percent, in comparison to basic literacy skills. In India, similar to other nations, the economic benefits of education are projected to be greater compared to other forms of investment. The biggest returns are observed at the primary level, while female education yields better returns than male education. Investing in basic education in India yields a direct economic return to society of over 20 percent. If India had made efforts to enhance the quality of education, the outcomes would have been significantly greater. The substandard nature of education has definitely limited the magnitude of gains.

KEY WORDS: INFLUENCE, PUBLIC, SPENDING ON EDUCATION, POVERTY LEVELS.

INTRODUCTION

The foundation of the concept of human development is the belief that human welfare is contingent on a multitude of factors, with health and education emerging as the most significant welfare indicators. According to Schultz (1961), substantial investments in human capital are essential in order to attain the benefits of modern industry and modern agriculture. A necessary precondition for long-term economic

growth, better education and health not only increase individual income through improved efficiency, but also contribute to that end, as stated by the World Bank in 2006. Education as a whole fosters economic expansion by imparting knowledge and developing abilities, whereas primary education establishes the groundwork for labor force capabilities and serves as a potent instrument to reduce poverty and promote socioeconomic development. The potential benefits of its outcomes are manifold. They may empower individuals to assume responsibility for their lives and make well-informed decisions, support the development of a democratic government, enhance social mobility and earning potential, improve the health and nutrition of families and individuals (especially women), and grant women the ability to manage their fertility. Consequently, the significantly greater social returns associated with primary education are only natural.

The past fifty years have been marked by unprecedented progress in education on a global scale, as evidenced by the rise in average school enrollment. However, the global advancement in educational metrics is limited solely to the quantitative aspect. The academic accomplishments have been significantly diminished. As a consequence, there is a substantial disparity between the market's ideal definition of qualified labor and the current capacity. According to Hanushek and Wosmann (2007), economic growth places significantly more emphasis on the quality of education, as gauged by the knowledge acquired by students, rather than the quantity of education, which is quantified by the number of pupils and number of school years. Quality development is not self-sustaining; it necessitates reforms in teacher preparation, enhancements in school infrastructure, motivation among educators, and a shift in pedagogical approaches that are more engaging for students.

The substantial gender gap in labor market participation, inadequate infrastructural facilities, and low educational standards—all of which are indicative of India's aspiration to become a global economic power—have generated valid concerns regarding the country's ability to maintain this rate of development. India has also ratified the Millennium Development Goal of achieving universal primary education by 2015. The approaching time period reveals a discernible trend within the education system: an increasing disparity in academic accomplishments between urban and rural areas, accompanied by burgeoning regional inequities. The percentage of individuals literate has increased significantly from 24.02 percent in 1961 to 74 percent in 2011. However, there are concerns regarding additional facets of education, including infrastructure, learning quality, and access to education. Investing in high-quality primary education is crucial for fostering inclusive development in the rapidly expanding economy of India.

Out of all the other variables that affect how the economy develops, education is the most crucial and significant. It supplies both qualitative and quantitative labor to support the nation's ongoing processes of development and production. Education fosters the growth of a person's intelligence, critical thinking skills, experience, aptitude, and positive outlook. It is a means of enhancing one's capacity for making decisions as well as novel developments in the fields of business, economics, technology, peace, social justice, and human rights. Nelson Mandela once said, "The most powerful weapon you can use to change the world is education."

According to the Indian Constitution, all children have the right to free and compulsory education up until the age of 14. The Indian government launched and carried out a number of policies and initiatives to establish and advance the nation's educational system after gaining independence. The Government implemented the Kothari Committee's recommendations as a "National Policy on Education" in 1968, primarily emphasizing universal elementary education, to facilitate the expansion and regulation of the education system. Following that, in 1986, the Indian government unveiled the "New National Policy on Education," a new education policy that prioritizes vocationalization and specialization in secondary and higher education, as well as universal elementary education. In order to uphold the nation's educational standards, NCERT (National Council for Educational Research and Training) and SCERT (State Council for Educational Research and Training) were founded a few years later. The government has implemented a number of education schemes and policies up to this point, which have improved the quality of education and had a positive impact. These include the Mid-Day Meal, the Mahila Samkhaya schemes for elementary education, the Rashtriya Madhyamik Shiksha Abhiyaan Schemes of Vocational Education, and National Scholarship, among others, for secondary education.

PRESENT STATUS OF EDUCATION IN INDIA

Given its status as the world's second most populous country after China and its rapid development, India also boasts a top-notch educational system. Since the country's independence, the standard of education has increased significantly, a vast number of schools, ranging from primary to higher education, have opened, and each year these institutions see an increase in enrollment, infrastructural improvements, and the availability of other resources that are necessary for providing high-quality instruction. Aside from the significant advancements in the educational system, certain states in the nation have not kept up with the rest, and some have advanced in education more than others. As per the findings of the Annual Status of Education Report (ASER) fourth annual report, from 2007 to 2014, the enrollment rate for pupils aged 6 to 14 remained

at 96%. In 2018, the percentage of pupils not enrolled in this age group fell to 2.8%. Eighty percent of officially accredited schools in India are government schools. Kerala became the first state in the world to achieve 100% basic education in January 2015. In terms of infrastructure, 66.4 percent of elementary schools have a useable restroom for girls, while 64.4 percent of schools have a campus boundary wall as of 2018, according to ASER data. According to the research, playgrounds were available in 90% of the schools in Maharashtra, Haryana, and Himachal Pradesh. Regarding secondary education, the District Information System for Education's flash statistics indicate that there were 252176 schools nationwide in 2015–16, of which 6.27 percent were girl-only and 91.46 percent were coeducational at the secondary level, and 7.43 percent were girl-only and 89.33 percent were coeducational at the senior secondary education level. In terms of physical facilities, boundary walls were present in 84.11 percent of secondary and senior secondary schools in 2015–16. The states of Mizoram, Tripura, Sikkim, and Bihar are those without the ability to have school campus boundary walls. According to flash figures from 2015–16, 98.4% of schools have a girls' restroom, whereas 97.9% of schools have a boy's restroom. The majority of Indian states and union territories have 100% of their schools equipped with restrooms for both boys and girls.

RESEARCH METHODOLOGY

The inquiry into the implemented approach holds significant importance in academic research. This document outlines the comprehensive strategy and approach used to conduct the study, specifically providing a complete account of the methods and strategies employed to address the research question. The problem, as expressed in a declarative sentence, indicates the essence of study and its systematic approach. The current study is evidently descriptive in character, aiming to analyze the existing reality of primary education in Uttar Pradesh. It also provides future insights to build strategies that can strengthen the education system in the region. John W succinctly asserts that descriptive research pertains to events that have already transpired. The researcher merely manipulates his methods of observation and description, through which he analyzes relationships. Its primary objective is to describe the diverse facets of reality or phenomena being studied. This description is developed based on careful observation, and it is anticipated to be more accurate and precise than a casual one. Descriptive research studies typically include collecting data inside a certain context and during a specific timeframe. The temporal scope of this study is mostly restricted to the 11th five-year plan, which serves as a significant source of guiding information in the form of time series data.

The current study also shares similarities with historical research, as it incorporates and reinforces the methodology. History is a series of important events that are interconnected and have meaningful explanations. It serves as a dependable and significant account of the history of the human race, examined from a broader and more comprehensive perspective. The utilization of the historical method to elucidate educational events, organizations, and activities from the distant or recent past has led to the development of a separate approach for attaining truth and generalizations. In this research approach, we consider that the truth we are attempting to record relates to a past moment in time. It necessitates the possession of a unique kind of patience, perseverance, and imagination. The historical method focuses on specific individual occurrences that can be defined in terms of time and geography, rather than attributes or characteristics that are common to large and potentially infinite groups. The historical material that serves as the foundation for this study has an unchangeable temporal position and belongs to the exclusive category of data. Therefore, in order to accomplish the objective of reconstructing a live history, it is necessary to create a series of legitimate assumptions and hypotheses based on the remaining remnants of the past. The present study significantly deviates from the historical research method.

Sample design

The researcher generates primary data by utilizing questionnaires and interview schedules to engage with the stakeholders. The stakeholders comprise of the parents and teachers residing in villages, as well as the officials associated with Uttar Pradesh schools. The stakeholders are assessed through the use of questionnaires and interview schedules. Random sampling is employed to generate primary data. Blocks are categorized as educationally advanced or educationally disadvantaged based on the rural literacy rate recorded in the 2011 Census.

Sampling Methodology

1. School selection: The schools are chosen based on their enrollment numbers. Half of the high enrollment schools and half of the low enrollment schools from each specified block are chosen. The primary sources of information are parents and teachers. Two schedules are prepared, namely the parent schedule and the teacher schedule. The researcher conducts the necessary observations.
2. The schools are chosen through proportionate scientific sampling from the total number of schools in the selected blocks in order to collect primary data. One school is chosen from each designated block based on the enrollment data from the 2016-21 academic year. Both schools with low

enrollment and schools with high enrollment were chosen in order to have a more comprehensive knowledge.

3. The parent respondent is chosen from the specified schools using a method called proportionate scientific sampling to collect primary data. Parents who respond are chosen from inside the social group. The parent responses are chosen from the registered child data. The following formula is utilized to determine the parent respondent.

RESULTS AND DISCUSSION

EVALUATION OF EDUCATIONAL PROGRESS (EDI) AT THE PRIMARY EDUCATION LEVEL

Primary education is fundamental education, or the initial stage in which an individual begins to cultivate their abilities. The government's strategies and policies should place greater emphasis on this stage. In the current investigation, we have constructed a composite index at the primary level to assess the level of development in states. This index categorizes states as developed, moderately developed, or less developed, and ranks them in accordance with the EDI values they have acquired.

TABLE 1: CATEGORY RANGES FOR PRIMARY EDUCATION LEVEL

Dimensions	Developed	Moderately Developed states	Less Developed States
Access Index	0.797 to 0.578	0.578 to 0.360	0.360 to 142
Infrastructure Index	0.950 to 0.671	0.671 to 0.386	0.386 to 0.102
Teacher's Index	0.825 to 0.718	0.718 to 0.612	0.612 to 0.506
Outcome Index	0.803 to 0.658	0.658 to 0.513	0.513 to 0.369

TABLE 2: EDI OF STATES AT PRIMARY EDUCATION LEVEL

State Name	Index (Category*)				EDI	Rank
	Access	Infrastructure	Teacher	Outcome		
Andaman & Nicobar island	0.198 (3)	0.834 (1)	0.824 (1)	0.734 (1)	0.603	10
Andhra Pradesh	0.199 (3)	0.758 (1)	0.632 (2)	0.702 (1)	0.544	18
Arunachal Pradesh	0.172 (3)	0.351 (3)	0.509 (3)	0.569 (2)	0.356	34

Assam	0.166 (3)	0.219 (3)	0.644 (2)	0.768 (1)	0.368	33
Bihar	0.27 (3)	0.204 (3)	0.557 (3)	0.568 (2)	0.347	35
Chandigarh	0.797 (1)	0.892 (1)	0.602 (3)	0.4 (3)	0.724	1
Chhattisgarh	0.211 (3)	0.723 (1)	0.676 (2)	0.729 (1)	0.547	17
Dadra and Nagar Haveli	0.244 (3)	0.82 (1)	0.799 (1)	0.572 (2)	0.579	13
Daman and Diu	0.338 (3)	0.872 (1)	0.696 (2)	0.54 (2)	0.606	9
Delhi	0.581 (1)	0.956 (1)	0.566 (3)	0.611 (2)	0.709	2
Goa	0.184 (3)	0.81 (1)	0.695 (2)	0.751 (1)	0.574	14
Gujarat	0.292 (3)	0.866 (1)	0.723 (1)	0.736 (1)	0.63	6
Haryana	0.292 (3)	0.827 (1)	0.645 (2)	0.532 (2)	0.567	15
Himachal Pradesh	0.219 (3)	0.833 (1)	0.739 (1)	0.76 (1)	0.602	11
Jammu & Kashmir	0.202 (3)	0.434 (2)	0.72 (1)	0.55 (2)	0.421	31
Jharkhand	0.219 (3)	0.584 (2)	0.506 (3)	0.449 (3)	0.426	30
Karnataka	0.256 (3)	0.68 (1)	0.698 (2)	0.727 (1)	0.551	16
Kerala	0.264 (3)	0.891 (1)	0.784 (1)	0.674 (1)	0.626	7
Lakshadweep	0.36 (3)	0.887 (1)	0.561 (3)	0.759 (1)	0.64	3
Madhya Pradesh	0.223 (3)	0.551 (2)	0.617 (2)	0.587 (2)	0.459	29
Maharashtra	0.232 (3)	0.812 (1)	0.692 (2)	0.744 (1)	0.589	12
Manipur	0.182 (3)	0.58 (2)	0.711 (2)	0.545 (2)	0.461	28
Meghalaya	0.189 (3)	0.102 (3)	0.742 (1)	0.512 (3)	0.303	36
Mizoram	0.266 (3)	0.675 (1)	0.746 (1)	0.632 (2)	0.542	19
Nagaland	0.242 (3)	0.439 (2)	0.728 (1)	0.369 (3)	0.403	32
Odisha	0.249 (3)	0.566 (2)	0.743 (1)	0.721 (1)	0.516	23
Puducherry	0.385 (2)	0.946 (1)	0.796 (1)	0.421 (3)	0.638	4
Punjab	0.282 (3)	0.867 (1)	0.768 (1)	0.657 (2)	0.619	8
Rajasthan	0.263 (3)	0.575 (2)	0.538 (3)	0.585 (2)	0.468	27
Sikkim	0.185 (3)	0.684 (1)	0.773 (1)	0.495 (3)	0.496	26
Tamil Nadu	0.214 (3)	0.885 (1)	0.825 (1)	0.803 (1)	0.638	5
Telengana	0.237 (3)	0.695 (1)	0.631 (2)	0.717 (1)	0.538	20
Tripura	0.233 (3)	0.576 (2)	0.701 (2)	0.692 (1)	0.503	25

Uttar Pradesh	0.272 (3)	0.704 (1)	0.626 (2)	0.536 (2)	0.517	22
Uttarakhand	0.214 (3)	0.67 (2)	0.728 (1)	0.646 (2)	0.523	21
West Bengal	0.142 (3)	0.703 (1)	0.705 (2)	0.627 (2)	0.503	24

* Indicates category of the state as Developed (1), Moderately Developed (2) and Less Developed (3)

The majority of states fall into the less developed category, as shown in Table. Chandigarh and Puducherry constituted the sole state that fell within the developed and moderately developed classification as determined by the Access Index. With regard to primary school infrastructure, the majority of states fall within the developed and moderately developed classifications. Only a limited number of states, including Rajasthan, Lakshadweep, Jharkhand, Delhi, Chandigarh, Bihar, and Arunachal Pradesh, are considered less developed in terms of the teacher's index.

According to the outcome index, the majority of states operate at a moderate level of development.. The data indicates that states with the most developed infrastructure facilities at the primary level are more developed than those in the remaining three dimensions; however, they are comparable in terms of development with regard to the teacher and outcome dimensions. Simultaneously, access reveals that the highest number of less developed states have access to upper primary institutions or sections of primary education is highest, indicating an urgent need for reform and the implementation of new policies and strategies to increase density, availability, and ratio.

EDI at the Level of Upper Primary

TABLE 3: RANGE FOR CATEGORIZATION OF STATES AT UPPER PRIMARY LEVEL

Dimensions	Developed	Moderately Developed states	Less Developed States
Access Index	0.778 to 0.520	0.520 to 0.626	0.626 to 0.005
Infrastructure Index	0.929 to 0.753	0.753 to 0.578	0.578 to 0.403
Teacher’s Index	1.00 to 0.666	0.666 to 0.333	0.333to 0.00
Outcome Index	1.408 to 0.811	0.811 to 0.575	0.575 to 0.339

TABLE 4: EDI OF STATES AT UPPER PRIMARY LEVEL

State Name	Index (Category)				EDI	Rank
	Access	Infrastructure	Teacher	Outcome		
Andaman & Nicobar island	0.017 (3)	0.789 (1)	0.000 (3)	0.685 (2)	0.4	34
Andhra Pradesh	0.010 (3)	0.868 (1)	0.87 (1)	0.725 (2)	0.66	10
Arunachal Pradesh	0.045 (3)	0.637 (2)	0.913 (1)	0.580 (2)	0.57	25
Assam	0.359 (2)	0.734 (2)	0.599 (2)	0.731 (2)	0.62	16
Bihar	0.229 (3)	0.600 (2)	0.706 (1)	0.572 (3)	0.54	27
Chandigarh	0.114 (3)	0.789 (1)	0.000 (3)	0.985 (1)	0.51	31
Chhattisgarh	0.368 (2)	0.691 (2)	0.778 (1)	0.690 (2)	0.65	11
Dadra and Nagar Haveli	0.258 (3)	0.929 (1)	0.837 (1)	0.667 (2)	0.7	3
Daman and Diu	0.330 (2)	0.773 (1)	0.915 (1)	0.688 (2)	0.7	4
Delhi	0.177 (3)	0.713 (2)	0.861 (1)	0.778 (2)	0.66	8
Goa	0.014 (3)	0.871 (1)	0.933 (1)	0.789 (2)	0.69	6
Gujarat	0.324 (2)	0.732 (2)	0.961 (1)	0.658 (2)	0.69	7
Haryana	0.060 (3)	0.634 (2)	0.869 (1)	0.671 (2)	0.59	21
Himachal Pradesh	0.116 (3)	0.654 (2)	0.822 (1)	0.735 (2)	0.61	18
Jammu & Kashmir	0.057 (3)	0.875 (1)	0.682 (1)	0.592 (2)	0.58	23
Jharkhand	0.093 (3)	0.403 (3)	0.774 (1)	0.457 (3)	0.45	33
Karnataka	0.305 (2)	0.721 (2)	0.816 (1)	0.717 (2)	0.66	9
Kerala	0.078 (3)	0.781 (1)	0.974 (1)	0.339 (3)	0.57	26
Lakshadweep	0.179 (3)	0.612 (2)	0.839 (1)	0.686 (2)	0.6	19
Madhya Pradesh	0.396 (2)	0.438 (3)	0.675 (1)	0.568 (3)	0.53	30
Maharashtra	0.036 (3)	0.54 (3)	0.925 (1)	0.705 (2)	0.58	22
Manipur	0.039 (3)	0.801 (1)	0.754 (1)	0.589 (2)	0.58	24
Meghalaya	0.734 (1)	0.81 (1)	0.587 (2)	0.446 (3)	0.64	14
Mizoram	0.778 (1)	0.78 (1)	0.828 (1)	0.632 (2)	0.75	2
Nagaland	0.019 (3)	0.728 (2)	0.771 (1)	0.354 (3)	0.49	32
Odisha	0.062 (3)	0.652 (2)	0.653 (2)	0.66 (2)	0.54	28

Puducherry	0.086 (3)	0.769 (1)	1.000 (1)	1.048 (1)	0.77	1
Punjab	0.061 (3)	0.726 (2)	0.993 (1)	0.625 (2)	0.63	15
Rajasthan	0.019 (3)	0.817 (1)	0.919 (1)	0.676 (2)	0.64	12
Sikkim	0.005 (3)	0.789 (1)	0.000 (3)	0.469 (3)	0.34	36
Tamil Nadu	0.013 (3)	0.861 (1)	0.935 (1)	0.806 (2)	0.69	5
Telengana	0.013 (3)	0.789 (1)	0.000 (3)	0.623 (2)	0.38	35
Tripura	0.017 (3)	0.762 (1)	1.000 (1)	0.642 (2)	0.64	13
Uttar Pradesh	0.311 (2)	0.646 (2)	0.734 (1)	0.622 (2)	0.59	20
Uttarakhand	0.214 (3)	0.67 (2)	0.728 (1)	0.646 (2)	0.523	21
West Bengal	0.142 (3)	0.703 (1)	0.705 (2)	0.627 (2)	0.503	24

Indicates category of the state as Developed (1), Moderately Developed (2) and Less Developed (3)

In comparison to other educational index dimensions, a number of states that provide access to upper primary institutions are less developed, as shown in Table. In contrast to the teacher's index, 27 states are classified as moderately developed, while 29 states are categorized as highly developed based on the outcome index, which includes significant ratios of females to boys enrollment and moderate dropout rates. When considering infrastructure, the disparity between developed and moderately developed states is comparatively smaller than that observed in other indices. Puducherry ranks highest on the EDI scale, surpassing Daman & Diu, Mizoram, Dadra & Nagar Haveli, and Daman & Diu, in that order. On the contrary, Sikkim, Telengana, Andaman & Nicobar Island, Jharkhand, and Nagaland are the least developed states, having achieved the lowest rank across all four dimensions that influence the education level of states.

EDI on the Primary Level

TABLE 5: RANGE FOR CATEGORIZATION OF STATES AT ELEMENTARY LEVEL

Dimension Level	Developed State	Moderately Developed State	Less Developed State
EDI at Primary	0.693 to 0.561	0.561 to 0.517	0.517 to 0.294
EDI at Upper Primary	0.770 to 0.626	0.626 to 0.483	0.483 to 0.340
Composite EDI at	0.622 to 0.526	0.526 to 0.430	0.430 to 0.335

Elementary			

TABLE 6: EDI AT ELEMENTARY LEVEL EDUCATION IN STATES

State Name	EDI (Category)			Rank
	PrimaryLevel	Upper Primary Level	Composite	
Andaman and Nicobar island	0.39 (3)	0.4 (3)	0.396 (3)	33
Andhra Pradesh	0.36 (3)	0.66 (1)	0.509 (2)	15
Arunachal Pradesh	0.3 (3)	0.57 (2)	0.433 (2)	30
Assam	0.35 (3)	0.62 (2)	0.485 (2)	23
Bihar	0.37 (3)	0.54 (2)	0.454 (2)	28
Chandigarh	0.69 (1)	0.51 (2)	0.601 (1)	3
Chhattisgarh	0.38 (3)	0.65 (1)	0.514 (2)	14
Dadra and Nagar Haveli	0.39 (3)	0.7 (1)	0.544 (1)	8
Daman and Diu	0.43 (3)	0.7 (1)	0.565 (1)	6
Delhi	0.58 (1)	0.66 (1)	0.622 (1)	1
Goa	0.37 (3)	0.69 (1)	0.529 (1)	11
Gujarat	0.44 (3)	0.69 (1)	0.565 (1)	5
Haryana	0.39 (3)	0.59 (2)	0.49 (2)	20
Himachal Pradesh	0.4 (3)	0.61 (2)	0.504 (2)	16
Jammu & Kashmir	0.34 (3)	0.58 (2)	0.462 (2)	26
Jharkhand	0.31 (3)	0.45 (3)	0.378 (3)	35
Karnataka	0.41 (3)	0.66 (1)	0.535 (1)	9
Kerala	0.42 (3)	0.57 (2)	0.494 (2)	19
Lakshadweep	0.47 (3)	0.6 (2)	0.533 (1)	10
Madhya Pradesh	0.35 (3)	0.53 (2)	0.44 (2)	29
Maharashtra	0.4 (3)	0.58 (2)	0.488 (2)	21
Manipur	0.33 (3)	0.58 (2)	0.454 (2)	27
Meghalaya	0.33 (3)	0.64 (1)	0.486 (2)	22

Mizoram	0.41 (3)	0.75 (1)	0.578 (1)	4
Nagaland	0.34 (3)	0.49 (2)	0.414 (3)	32
Odisha	0.41 (3)	0.54 (2)	0.476 (2)	25
Puducherry	0.45 (3)	0.77 (1)	0.611 (1)	2
Punjab	0.42 (3)	0.63 (1)	0.527 (1)	12
Rajasthan	0.36 (3)	0.64 (1)	0.502 (2)	17
Sikkim	0.33 (3)	0.34 (3)	0.335 (3)	36
Tamil Nadu	0.42 (3)	0.69 (1)	0.553 (1)	7
Telengana	0.39 (3)	0.38 (3)	0.383 (3)	34
Tripura	0.39 (3)	0.64 (1)	0.514 (2)	13
Uttar Pradesh	0.37 (3)	0.59 (2)	0.482 (2)	24
Uttarakhand	0.37 (3)	0.62 (2)	0.496 (2)	18
West Bengal	0.32 (3)	0.53 (2)	0.423 (3)	31

The development of elementary education at the state level in India is presented in Table 7, along with composite indices and ranks corresponding to these indices. The composite index indicates that the states with the highest EDI are Delhi, Puducherry, Chandigarh, Nagaland, and Gujarat. On the contrary, states including Sikkim, Jharkhand, Andaman & Nicobar, and Telengana are classified as less developed regions with regard to education within the nation. The states with the highest EDI at the primary level are Chandigarh (0.69), Delhi (0.58), and Lakshadweep (0.47). In contrast, Puducherry (0.77), Mizoram (0.75), and Dadra & Nagar Haveli (0.70) have the highest EDI at the upper primary level. It indicates that there are substantial disparities in the level of elementary education development between states. Less developed states at the primary level include Arunachal Pradesh, West Bengal, and Manipur, which have respective EDI values of 0.30, 0.32, and 0.33.

With regard to the Educational Development Index of Primary level (figure 3), a considerable number of states are classified as less developed, with only two states, namely Chandigarh and Delhi, exhibiting substantial progress. No state can be classified as moderately developed in this regard. In contrast to the EDI at the primary level, an opposite trend has been observed at the upper primary level, where the majority of states are classified as developed or moderately developed. However, the composite index indicates that the state of affairs at the elementary level is not as dire as the individual indices suggest, given that the majority

of states fall into the categories of moderately developed and developed according to the composite EDI. Consequently, our research demonstrates that disparities exist in the elementary education levels of Indian states, including low student enrollment, high rates of repetition, and a dearth of primary and upper primary instructors, among others; consequently, immediate action is required to further improve elementary education.

EDI at the Level of Secondary Education

Education development is depicted in Table 8 along the following four dimensions: access, teacher, infrastructure, and outcome. A composite EDI has been calculated for the aforementioned dimensions pertaining to secondary education in the states of India. Following this, the states have been classified according to the values of their respective indices as developed, moderately developed, or less developed.

TABLE 7: RANGE FOR CATEGORIZATION OF STATES AT SECONDARY LEVEL

Dimensions	Developed State	Moderately Developed state	Less Developed State
Access Index	0.406 to 0.274	0.274 to 0.142	0.142 to 0.010
Teacher's Index	0.886 to 0.730	0.730 to 0.574	0.574 to 0.418
Infrastructure Index	0.749 to 0.608	0.608 to 0.466	0.466 to 0.325
Outcome Index	0.712 to 0.585	0.585 to 0.457	0.457 to 0.330

TABLE 8: EDI OF SECONDARY EDUCATION LEVEL

State Name	Index (Category)				EDI	Rank
	Access	Infrastructure	Teacher	Outcome		
Andaman & Nicobar island	0.01 (3)	0.729 (2)	0.683 (1)	0.66 (1)	0.578	6
Andhra Pradesh	0.302 (1)	0.803 (1)	0.627 (1)	0.569 (2)	0.59	3
Arunachal Pradesh	0.014 (3)	0.729 (2)	0.325 (3)	0.331 (3)	0.355	36
Assam	0.12 (3)	0.596 (2)	0.669 (1)	0.65 (1)	0.562	10
Bihar	0.032 (3)	0.418 (3)	0.475 (2)	0.476 (2)	0.394	34
Chandigarh	0.331 (1)	0.729 (2)	0.388 (3)	0.36 (3)	0.435	33

Chhattisgarh	0.03 (3)	0.67 (2)	0.58 (2)	0.579 (2)	0.51	23
Dadra and Nagar Haveli	0.047 (3)	0.575 (2)	0.515 (2)	0.511 (2)	0.451	31
Daman and Diu	0.127 (3)	0.658 (2)	0.499 (2)	0.491 (2)	0.468	29
Delhi	0.406 (1)	0.729 (2)	0.645 (1)	0.633 (1)	0.62	1
Goa	0.055 (3)	0.57 (3)	0.524 (2)	0.5 (2)	0.451	32
Gujarat	0.046 (3)	0.595 (2)	0.689 (1)	0.653 (1)	0.558	11
Haryana	0.054 (3)	0.508 (3)	0.641 (1)	0.603 (1)	0.511	22
Himachal Pradesh	0.026 (3)	0.729 (2)	0.551 (2)	0.525 (2)	0.494	26
Jammu & Kashmir	0.033 (3)	0.563 (3)	0.564 (2)	0.537 (2)	0.471	28
Jharkhand	0.043 (3)	0.446 (3)	0.749 (1)	0.712 (1)	0.568	8
Karnataka	0.127 (3)	0.647 (2)	0.502 (2)	0.466 (2)	0.459	30
Kerala	0.038 (3)	0.626 (2)	0.614 (1)	0.603 (1)	0.522	21
Lakshadweep	0.126 (3)	0.729 (2)	0.511 (2)	0.518 (2)	0.494	25
Madhya Pradesh	0.052 (3)	0.64 (2)	0.696 (1)	0.659 (1)	0.572	7
Maharashtra	0.038 (3)	0.69 (2)	0.625 (1)	0.6 (1)	0.537	16
Manipur	0.049 (3)	0.706 (2)	0.608 (1)	0.597 (1)	0.535	18
Meghalaya	0.231 (2)	0.626 (2)	0.69 (1)	0.68 (1)	0.602	2
Mizoram	0.346 (1)	0.68 (2)	0.59 (2)	0.577 (2)	0.565	9
Nagaland	0.038 (3)	0.568 (3)	0.666 (1)	0.643 (1)	0.54	15
Odisha	0.064 (3)	0.596 (2)	0.587 (2)	0.558 (2)	0.497	24
Puducherry	0.224 (2)	0.729 (2)	0.582 (2)	0.545 (2)	0.542	14
Punjab	0.058 (3)	0.886 (1)	0.64 (1)	0.604 (1)	0.584	4
Rajasthan	0.03 (3)	0.729 (2)	0.541 (2)	0.505 (2)	0.485	27
Sikkim	0.022 (3)	0.729 (2)	0.599 (2)	0.567 (2)	0.522	20
Tamil Nadu	0.034 (3)	0.755 (1)	0.602 (2)	0.582 (2)	0.535	17
Telengana	0.065 (3)	0.729 (2)	0.379 (3)	0.335 (3)	0.382	35
Tripura	0.04 (3)	0.603 (2)	0.666 (1)	0.648 (1)	0.549	12
Uttar Pradesh	0.044 (3)	0.527 (3)	0.686 (1)	0.658 (1)	0.545	13
Uttarakhand	0.032 (3)	0.687 (2)	0.7 (1)	0.672 (1)	0.583	5
West Bengal	0.035 (3)	0.729 (2)	0.617 (1)	0.577 (2)	0.534	19

The composite EDI indicates that only two states, namely Meghalaya and Delhi, have achieved a 60 percent improvement in secondary education compared to the remaining states in the country. As a contrast, a minority of the states are classified as less developed, while the majority are classified as developed to the extent of fifty percent.

However, upon examination of the four-dimensional index, it becomes evident that numerous states have been classified as less developed with regard to access, while they are categorized as moderately developed in terms of infrastructure facilities. While certain states, including Mizoram, Delhi, and Andhra Pradesh, appear to be highly developed according to the access index, an examination of their index values reveals that they are only 40 to 30 percent developed, which indicates inadequate school access development. In contrast, the following three states exhibit the most substantial levels of infrastructure development: Andhra Pradesh, with over 70 percent of its infrastructure facilities in operation, stands out.

An analysis of the states' categorization is presented in Figure 4, which demonstrates that substantial variations exist among the states along various dimensions. There is minimal distinction between developed and moderately developed states with regard to access, teachers, and outcome indices. However, when considering infrastructure, only three states are classified as developed, while the remaining 26 states fall into the category of moderately developed. The provinces of Telengana, Arunachal Pradesh, and Chandigarh are classified as less developed according to the teacher and outcome index.

EDI AT THE LEVEL OF SENIOR SECONDARY

TABLE 9: RANGE FOR CATEGORIZATION OF STATES AT SENIOR SECONDARY EDUCATION LEVEL

Dimensions	Developed State	Moderately Developed State	Less Developed State
Access Index	0.510 to 0.340	0.340 to 0.170	0.170 to 0.000
Teacher’s Index	0.870 to 0.676	0.676 to 0.483	0.483 to 0.290
Infrastructure Index	0.980 to 0.653	0.653 to 0.326	0.326 to 0.000
Outcome Index	0.750 to 0.643	0.643 to 0.536	0.536 to 0.430

TABLE 10: EDI OF SENIOR SECONDARY EDUCATION LEVEL

State Name	Index (Category)				EDI	Rank
	Access	Infrastructure	Teacher	Outcome		
Andaman & Nicobar island	0.01 (3)	0.77 (1)	0 (3)	0.62 (2)	0.371225	32
Andhra Pradesh	0.01 (3)	0.77 (1)	0 (3)	0.43 (3)	0.313982	36
Arunachal Pradesh	0 (3)	0.77 (1)	0.7 (1)	0.63 (2)	0.600453	22
Assam	0.02 (3)	0.68 (1)	0.73 (1)	0.64 (2)	0.594538	23
Bihar	0.02 (3)	0.45 (3)	0.81 (1)	0.59 (2)	0.550798	27
Chandigarh	0.28 (2)	0.77 (1)	0 (3)	0.46 (3)	0.359702	33
Chhattisgarh	0.01 (3)	0.69 (1)	0.86 (1)	0.69 (1)	0.652884	14
Dadra and Nagar Haveli	0.02 (3)	0.29 (3)	0.83 (1)	0.57 (2)	0.513233	29
Daman and Diu	0.09 (3)	0.81 (1)	0.9 (1)	0.61 (2)	0.681185	8
Delhi	0.5 (1)	0.87 (1)	0.85 (1)	0.64 (2)	0.743936	1
Goa	0.02 (3)	0.74 (1)	0.92 (1)	0.73 (1)	0.697688	7
Gujarat	0.02 (3)	0.73 (1)	0.91 (1)	0.63 (2)	0.661931	11
Haryana	0.04 (3)	0.71 (1)	0.98 (1)	0.68 (1)	0.697715	6
Himachal Pradesh	0.02 (3)	0.79 (1)	0.95 (1)	0.69 (1)	0.707278	5
Jammu & Kashmir	0 (3)	0.55 (2)	0.86 (1)	0.6 (2)	0.591125	24
Jharkhand	0.01 (3)	0.49 (2)	0.8 (1)	0.67 (1)	0.579801	25
Karnataka	0.02 (3)	0.78 (1)	0.75 (1)	0.58 (2)	0.606738	21
Kerala	0 (3)	0.84 (1)	0.93 (1)	0.73 (1)	0.721998	3
Lakshadweep	0.18 (2)	0.77 (1)	0 (3)	0.63 (2)	0.397334	31
Madhya Pradesh	0.01 (3)	0.76 (1)	0.85 (1)	0.65 (1)	0.654225	13
Maharashtra	0.01 (3)	0.63 (2)	0.93 (1)	0.68 (1)	0.658363	12
Manipur	0.01 (3)	0.67 (2)	0.87 (1)	0.68 (1)	0.648367	15
Meghalaya	0.01 (3)	0.81 (1)	0.74 (1)	0.68 (1)	0.63939	18
Mizoram	0.02 (3)	0.78 (1)	0.74 (1)	0.67 (1)	0.630603	19
Nagaland	0.01 (3)	0.73 (1)	0.84 (1)	0.64 (2)	0.640828	17
Odisha	0.01 (3)	0.62 (2)	0.8 (1)	0.43 (3)	0.538402	28

Puducherry	0.15 (3)	0.61 (2)	0.89 (1)	0.69 (1)	0.662637	10
Punjab	0.04 (3)	0.83 (1)	0.95 (1)	0.7 (1)	0.722518	2
Rajasthan	0.02 (3)	0.77 (1)	0 (3)	0.55 (2)	0.351494	34
Sikkim	0.01 (3)	0.77 (1)	0 (3)	0.75 (1)	0.410391	30
Tamil Nadu	0.02 (3)	0.79 (1)	0.95 (1)	0.71 (1)	0.713303	4
Telengana	0.51 (1)	0.55 (2)	0.84 (1)	0.58 (2)	0.647884	16
Tripura	0.02 (3)	0.77 (1)	0 (3)	0.53 (3)	0.345468	35
Uttar Pradesh	0.03 (3)	0.44 (3)	0.73 (1)	0.7 (1)	0.556911	26
Uttarakhand	0.02 (3)	0.81 (1)	0.78 (1)	0.71 (1)	0.662791	9
West Bengal	0.04 (3)	0.67 (2)	0.74 (1)	0.69 (1)	0.613192	20

The progress of senior secondary education in states across the four dimensions and the composite index (EDI) of the states, along with the ranks assigned to them based on their EDI value, are presented in Table. As with secondary education, it indicates that the majority of states are less developed in terms of access to secondary education. In school access, only two states with 50 percent EDI are considered highly developed. In contrast to access, other indices are in a favorable position. Regarding the aggregate EDI, five states have an EDI value exceeding seventy percent, while six states have an EDI value of thirty percent.

EDI AT THE LEVEL OF SENIOR SECONDARY EDUCATION

The states' EDIs for secondary and senior secondary education, as well as a composite index of both levels, are presented in Table 12. The data indicates that states have made greater strides in senior secondary education compared to secondary education. Meghalaya has the highest EDI value at the secondary level, at 0.600, followed by Andhra Pradesh, Andaman Nicobar, Mizoram, and Madhya Pradesh, all of which have an EDI value exceeding 50 percent.

TABLE 11: COMPOSITE EDI AT SECONDARY AND SENIOR SECONDARY EDUCATION LEVEL

State Name	EDI (Category)			Rank
	SecondaryLevel	Senior Secondary Level	Composite	

Andaman and Nicobar island	0.58 (1)	0.37 (3)	0.475	29
Andhra Pradesh	0.59 (1)	0.31 (3)	0.450	33
Arunachal Pradesh	0.36 (3)	0.6 (1)	0.480	27
Assam	0.56 (1)	0.6 (1)	0.580	16
Bihar	0.39 (3)	0.55 (2)	0.470	30
Chandigarh	0.44 (3)	0.36 (3)	0.400	36
Chhattisgarh	0.51 (2)	0.65 (1)	0.580	16
Dadra and Nagar Haveli	0.45 (2)	0.51 (2)	0.480	28
Daman and Diu	0.47 (2)	0.68 (1)	0.575	18
Delhi	0.62 (1)	0.74 (1)	0.680	1
Goa	0.45 (2)	0.7 (1)	0.575	18
Gujarat	0.56 (1)	0.66 (1)	0.610	7
Haryana	0.51 (2)	0.7 (1)	0.605	9
Himachal Pradesh	0.49 (2)	0.71 (1)	0.600	10
Jammu & Kashmir	0.47 (2)	0.59 (2)	0.530	24
Jharkhand	0.57 (1)	0.58 (2)	0.575	20
Karnataka	0.46 (2)	0.61 (1)	0.535	23
Kerala	0.52 (2)	0.72 (1)	0.620	4
Lakshadweep	0.49 (2)	0.4 (3)	0.445	34
Madhya Pradesh	0.57 (1)	0.65 (1)	0.610	8
Maharashtra	0.54 (1)	0.66 (1)	0.600	10
Manipur	0.54 (1)	0.65 (1)	0.595	14
Meghalaya	0.6 (1)	0.64 (1)	0.620	6
Mizoram	0.57 (1)	0.63 (1)	0.600	13
Nagaland	0.54 (1)	0.64 (1)	0.590	15
Odisha	0.5 (2)	0.54 (2)	0.520	25
Puducherry	0.54 (1)	0.66 (1)	0.600	10
Punjab	0.58 (1)	0.72 (1)	0.650	2
Rajasthan	0.49 (2)	0.35 (3)	0.420	35
Sikkim	0.52 (2)	0.41 (3)	0.465	31

Tamil Nadu	0.54 (1)	0.71 (1)	0.625	3
Telengana	0.38 (3)	0.65 (1)	0.515	26
Tripura	0.55 (1)	0.35 (3)	0.450	32
Uttar Pradesh	0.55 (1)	0.56 (2)	0.555	22
Uttarakhand	0.58 (1)	0.66 (1)	0.620	4
West Bengal	0.53 (2)	0.61 (1)	0.570	21

At the secondary level, only four states, namely Telengana, Bihar, Chandigarh, and Arunachal Pradesh, are classified as less developed states. In the realm of senior secondary education level development, the majority of states, including Delhi (0.740), Punjab (0.720), and Himachal Pradesh (0.720), are regarded as developed. In composite EDI, Delhi ranks first, followed by Tamil Nadu, Kerala, Punjab, and Uttarakhand. States with the lowest EDI values, namely Chandigarh, Rajasthan, Lakshadweep, and Arunachal Pradesh, are regarded as the least developed states with regard to secondary and senior secondary education.

EDI PERTAINING TO EDUCATION

TABLE 12: RANGE FOR CATEGORIZATION OF STATES AT SCHOOL EDUCATION

Dimensions Level	Developed State	Moderately Developed State	Less Developed State
Primary	0.750 to 0.610	0.610 to 0.470	0.470 to 0.330
Upper Primary	0.770 to 0.626	0.626 to 0.483	0.483 to 0.340
Secondary	0.620 to 0.533	0.533 to 0.446	0.446 to 0.360
Senior Secondary	0.740 to 0.596	0.596 to 0.453	0.453 to 0. 310

TABLE 13: A COMPOSITE EDI OF SCHOOL EDUCATION IN STATES

State Name	EDI (Category)				Composite EDI	Rank
	Primary	Upper Primary	Secondary	Senior Secondary		
Andaman & Nicobar island	0.63 (1)	0.4 (3)	0.58 (1)	0.37 (3)	0.479	34

Andhra Pradesh	0.56 (2)	0.66 (1)	0.59 (1)	0.31 (3)	0.534	26
Arunachal Pradesh	0.37 (3)	0.57 (2)	0.36 (3)	0.6 (1)	0.492	33
Assam	0.37 (3)	0.62 (2)	0.56 (1)	0.6 (1)	0.546	22
Bihar	0.37 (3)	0.54 (2)	0.39 (3)	0.55 (2)	0.475	35
Chandigarh	0.75 (1)	0.51 (2)	0.44 (3)	0.36 (3)	0.514	29
Chhattisgarh	0.57 (2)	0.65 (1)	0.51 (2)	0.65 (1)	0.605	13
Dadra and Nagar Haveli	0.59 (2)	0.7 (1)	0.45 (2)	0.51 (2)	0.579	16
Daman and Diu	0.66 (1)	0.7 (1)	0.47 (2)	0.68 (1)	0.643	7
Delhi	0.65 (1)	0.66 (1)	0.62 (1)	0.74 (1)	0.671	2
Goa	0.59 (2)	0.69 (1)	0.45 (2)	0.7 (1)	0.625	8
Gujarat	0.69 (1)	0.69 (1)	0.56 (1)	0.66 (1)	0.658	4
Haryana	0.61 (2)	0.59 (2)	0.51 (2)	0.7 (1)	0.608	11
Himachal Pradesh	0.63 (1)	0.61 (2)	0.49 (2)	0.71 (1)	0.618	10
Jammu & Kashmir	0.46 (3)	0.58 (2)	0.47 (2)	0.59 (2)	0.534	25
Jharkhand	0.42 (3)	0.45 (3)	0.57 (1)	0.58 (2)	0.499	31
Karnataka	0.59 (2)	0.66 (1)	0.46 (2)	0.61 (1)	0.594	15
Kerala	0.67 (1)	0.57 (2)	0.52 (2)	0.72 (1)	0.623	9
Lakshadweep	0.64 (1)	0.6 (2)	0.49 (2)	0.4 (3)	0.537	23
Madhya Pradesh	0.48 (2)	0.53 (2)	0.57 (1)	0.65 (1)	0.557	21
Maharashtra	0.63 (1)	0.58 (2)	0.54 (1)	0.66 (1)	0.605	14
Manipur	0.47 (2)	0.58 (2)	0.54 (1)	0.65 (1)	0.565	17
Meghalaya	0.33 (3)	0.64 (1)	0.6 (1)	0.64 (1)	0.56	20
Mizoram	0.61 (2)	0.75 (1)	0.57 (1)	0.63 (1)	0.653	5
Nagaland	0.44 (3)	0.49 (2)	0.54 (1)	0.64 (1)	0.526	27
Odisha	0.56 (2)	0.54 (2)	0.5 (2)	0.54 (2)	0.537	24
Puducherry	0.65 (1)	0.77 (1)	0.54 (1)	0.66 (1)	0.671	1
Punjab	0.66 (1)	0.63 (1)	0.58 (1)	0.72 (1)	0.651	6
Rajasthan	0.5 (2)	0.64 (1)	0.49 (2)	0.35 (3)	0.505	30
Sikkim	0.51 (2)	0.34 (3)	0.52 (2)	0.41 (3)	0.431	36

Tamil Nadu	0.67 (1)	0.69 (1)	0.54 (1)	0.71 (1)	0.663	3
Telengana	0.58 (2)	0.38 (3)	0.38 (3)	0.65 (1)	0.496	32
Tripura	0.53 (2)	0.64 (1)	0.55 (1)	0.35 (3)	0.523	28
Uttar Pradesh	0.54 (2)	0.59 (2)	0.55 (1)	0.56 (2)	0.563	18
Uttarakhand	0.55 (2)	0.62 (2)	0.58 (1)	0.66 (1)	0.607	12
West Bengal	0.58 (2)	0.53 (2)	0.53 (2)	0.61 (1)	0.562	19

The 2016-17 EDI for school education in the Indian States is presented in Table 14, which also includes the categories that were assigned to the states based on their respective levels of school education. It is evident that states such as Delhi, Punjab, Puducherry, and Tamil Nadu, which possess an EDI exceeding 60 percent, are classified as developed at all educational levels. However, these states have achieved disparate rankings on the composite educational development index. The data indicates that Puducherry has attained the highest ranking in the composite index, with Delhi and Tamil Nadu securing the second and third positions, respectively. Punjab, which is classified as developed at all educational levels, has achieved the sixth position on the composite index. In contrast, Gujarat and Mizoram are positioned fourth and fifth, respectively. The states of Arunachal Pradesh, Sikkim, Bihar, and Andaman & Nicobar rank lowest on the composite education development index. Simultaneously, the number of states with moderate development at the upper primary and primary levels of education is equivalent. The less developed states exhibit similarity in EDI across senior secondary and primary levels, as well as identicality in EDI across upper primary and secondary levels. It demonstrates the vast disparity between states regarding the development of education along its various dimensions. Certain states have achieved remarkable success in the provision of adequate resources for education, while others are further behind in this regard.

CONCLUSION

Education advancement is a critical concern for the governments and citizens of all nations. Therefore, an effort is undertaken to assess the progress of education in the Indian states in this research, and a composite index is calculated for the fiscal year 2016-17. Additionally, states have been classified as developed, moderately developed, or less developed in order to facilitate the formulation of improvement suggestions for those classified as moderately or less developed. The majority of states, according to the study, are classified as less evolved in terms of primary education because they lack access facilities. A significant proportion of the states fall within the moderately developed category during upper primary. Secondary and

senior secondary education are significantly more favorable than elementary school. The states of Puducherry, Delhi, Punjab, and Tamil Nadu have the highest EDI rankings and are therefore considered developed. Simultaneously, the least developed states, including Sikkim, Bihar, Andaman & Nicobar, and Arunachal Pradesh, have attained the lowest level. Thus, it demonstrates that there are numerous variations among nations regarding the provision of superior education. As a consequence, the government must immediately implement its proposed improvements to the education system. Greater emphasis should be placed on primary and upper primary education, as many states lag behind in these two domains.

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