The State of Education in India's Union Territories: A Quantitative Analysis of Literacy Rates, School Distribution, and Infrastructure Needs

ABSTRACT

This article explores the educational scenario prevailing in the Union Territories (UTs) of India and assesses the multiple interactions of infrastructural factors, literacy rates, and socio-economic variables. The analysis is based in part on quantitative data from Census 2011 and the U-DISE+ 2021-2022 report on school enrolment, literacy rates, numbers of schools, and the availability of key facilities, including electricity, ramps, libraries, and digital infrastructure. The outcome indicates substantial differences amongst these UTs: Jammu and Kashmir and Ladakh account for the highest numbers of schools, although they record low literacy rates; Lakshadweep, however, has the least concentration of schools-yet reports the highest literacy rate. The survey also puts forward urban-rural differences whereby typically, urban areas have better educational results and infrastructural development. The data showed a distinct need for the initiation of suitable policy intervention to narrow down the urban-rural divide and expand educational equity among regions. The article, by presenting the different problems and prospects within each UT, is programmed to serve as a basis for policy development and allocation of resources directed at engendering a conducive educational environment across India's different territories.

**Keyword: ***Union Territories Education, Literacy Rates, School Infrastructure, Educational Facilities, Urban-Rural Divide, Policy Interventions, Library, Digital Resources*

INTRODUCTION:

The Union Territories of India have ~~ana~~ unique landscape in terms of education as characterized by a diverse range of conditions of geographics, demographics, and socio-economic conditions. Ranging from the bustling urban environment of Delhi to remote, serene islands of Lakshadweep, each Union Territory has developed its education system [12] to serve the specific needs of its population. Despite such specific attempts, there still remain many challenges in all three territories--deficient resources, geographical [7] barriers, and socio-economic disparities [6]. ~~Which~~ These disparities often restrict the provisions of education and thus pose a complex environment for the centralized administration to balance uniform policy [13] implementation with the specific need of every territory. The result is a dynamic yet uneven educational landscape, where opportunities for innovation and localized adaptation are as prevalent as the obstacles that hinder progress.

INFRASTRUCTURE AND ITS IMPACT ON EDUCATIONAL OUTCOMES:

Infrastructure is a critical component in the development and success of school education9 systems, particularly in the Union Territories of India11. The quality of educational infrastructure, including school buildings, classrooms, libraries, and digital resources, directly influences the learning experience and academic outcomes ~~for~~ of students. Such as in the case of the Andaman and Nicobar Islands, lack of electricity and clean water in schools is a significant barrier to education. Similarly, extreme climates in regions like Ladakh pose logistical difficulties5 in the ~~maintenance~~ development and ~~development~~

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maintenance of school infrastructure10. But there are also examples of impressive successes: recently, in Delhi, for example, introducing modern, well-equipped schools improved the quality of education and increased enrollment. These examples put greater emphasis on the significance of infrastructure and indicate a further need to ~~focus~~ prioritize investment in school infrastructure across all Union Territories8 to ensure that every child has access to a conducive learning environment.

LITERATURE REVIEW

Choudhary (2018)1 discusses the influences of centralized decision-making on educational policies in the Union of India, underscoring how the vastly different combinations of geography and socio-economic conditions within any given region impact the implementation of policies. The report underscores the gaps in educational infrastructure and the tensions involved in balancing uniform policy interventions with local realities. Choudhary's understanding provides a detailed structure and operational setup to grasp the challenges of implementing successful education reforms, which is important in interpreting the disparities that were observed within the survey.

Sahu (2019)2 addresses educational challenges in geographically isolated regions, focusing on the Andaman & Nicobar Islands and Lakshadweep. The study underscores the unique obstacles these territories face, such as limited infrastructure and resources, which impact educational outcomes. Sahu's insights into the difficulties experienced in remote areas provide valuable context for understanding the disparities in literacy rates and infrastructure highlighted by the survey.

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INTRODUCTION OF THE SURVEY

This survey comprehensively analyzes educational infrastructure and literacy rates across various Union Territories of India. It encompasses multiple dimensions, including literacy rates segmented by gender and urban-rural divides, the distribution of schools, the availability of essential facilities such as electricity and ramps, and educational resources like libraries and computers. By examining these aspects, the survey aims to highlight disparities and opportunities in educational development across different regions.

Key Objectives of the Survey:

I. Evaluate Educational Indicators: Analyze and compare literacy rates, school distribution, and the availability of essential educational facilities across Union Territories.

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II. Identify Regional Disparities: Highlight significant differences in educational infrastructures ~~outcomes~~ and ~~infrastructure~~ outcomes between various Union Territories.

III. Assess Infrastructure Impact: Examine how infrastructure quality, including facilities like libraries/reading room/book banks, ramps, electricity, solar, computers and internet, influences educational performance.

IV. Inform Policy Development: Provide data-driven insights to guide policy improvements and targeted interventions for enhancing educational equity and resource allocation across Union Territories.

Methodology:

The survey employs a quantitative approach to analyze educational data across Union Territories. Literacy rates are derived from the Census 2011 data4, providing a demographic overview of literacy by gender and location. Other educational metrics, including school distribution, facilities, and resources, are sourced from the U-DISE+ 2021-22 report[3]. This methodology ensures a robust analysis of educational infrastructure and resource availability across regions.

Data Analysis:
Quantitative data obtained from the survey were analyzed using statistical methods to identify patterns, correlations, and trends.

RESLUT AND DISCUSSION:

DATA REPRESENTATION

Table 1- Literacy Rates by Gender and Urban-Rural Divide Across Union Territories in India

Name of union territories	Rural Male	Rural Female	Rural Literacy	Urban Male	Urban Female	Urban Literacy	Overall Literacy
Lakshadweep	94.53 %	88.50%	91.58%	95.84%	87.79%	91.92%	91.85%
Daman and Diu	89.43 %	71.93%	81.36%	92.10%	82.88%	88.96%	87.10%
A. and N. Islands	88.53 %	79.85%	84.50%	93.11%	86.63%	90.10%	86.63%
Delhi	89.37 %	73.10%	81.86%	90.98%	80.95%	86.32%	86.21%
Chandigarh	85.77%	73.17%	80.75%	90.11%	81.38%	86.19%	86.05%
Puducherry	87.44 %	73.02%	80.10%	93.03%	84.17%	88.49%	85.85%
D. and N. Haveli	76.40 %	49.58%	64.12%	93.99%	83.38%	89.79%	76.24%
Jammu and Kashmir	73.76 %	51.64%	63.18%	83.92%	69.01%	77.12%	67.16%

(Note : A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir)

This table 1 presents literacy rates segmented by gender and urban-rural location across various Union Territories. The data highlights differences in literacy between rural and urban areas as well as between male and female populations. For instance, Lakshadweep shows the highest overall literacy rate at 91.85%, with a notable distinction between rural and urban literacy rates, especially among males. Jammu and Kashmir exhibit the lowest overall literacy rate at 67.16%, with significant disparities between rural and urban areas. The data underscores the impact of geographical and gender factors on literacy rates, revealing that urban areas generally have higher literacy rates compared to rural areas, and male literacy rates often exceed those of females.

Table 2 - Distribution of Schools Across Union Territories in India

Name of union territories	*Total No. of Schools*	*Percentage %*
A & N Islands	*416*	*1.12*

Chandigarh	*233*	*0.62*
D & N H and D & D	*460*	*1.23*
Delhi	*5619*	*15.07*
J & K	*28805*	*77.26*
Ladakh	*978*	*2.62*
Lakshadweep	*38*	*0.10*
Puducherry	*736*	*1.97*
Grand Total	*37285*	

* A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir

This table 2 presents the distribution of schools across various Union Territories in India, detailing both the total number of schools and their respective percentages relative to the national total. The data reveals significant disparities, with Jammu & Kashmir comprising the majority at 77.26%, followed by Delhi at 15.07%. Union Territories like Lakshadweep and Chandigarh represent the lowest proportions, with 0.10% and 0.62%, respectively. This distribution highlights the concentration of educational infrastructure in specific regions, emphasizing the need for targeted policy interventions to address regional imbalances in school availability across Union Territories.

Table 3 - Distribution of Schools and Literacy Rates Across Union Territories of India

Name of union territories	Sum of T No. of Schools	Percentage %	Literacy %
J & K and Ladakh	29783	79.88	67.16%
Delhi	5619	15.07	86.21%
Puducherry	736	1.97	85.85%
D & N H and D & D	460	1.23	81.67%
A& N Islands	416	1.12	86.63%
Chandigarh	233	0.62	86.05%
Lakshadweep	38	0.1	91.85%
Total	37285		

(Note : A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir)

This table 3 illustrates the distribution of schools and literacy rates across various Union Territories in India. Jammu & Kashmir and Ladakh, with 79.88% of the total schools, exhibit the lowest literacy rate of 67.16%. Conversely, Lakshadweep, with the smallest least number of schools at 0.1%, achieves the highest literacy rate of 91.85%. Delhi, with a moderate share of 15.07% of schools, shows a relatively high literacy rate of 86.21%. This data highlights significant regional disparities, where high school numbers do not necessarily correlate with higher literacy rates, emphasizing the need for targeted interventions to improve educational outcomes in less literate regions.

Table 4 - Distribution of Schools in Rural and Urban Areas Across Union Territories in India

Name of union territories	*Schools in Rural*	*Rural %*	*Schools in Urban*	*Urban %*	*Total Schools*
A& N Islands	*357*	*85.82*	*59*	*14.18*	*416*
Chandigarh	*0*	*0.00*	*233*	*100.00*	*233*
D & N H and D & D	*393*	*85.43*	*67*	*14.57*	*460*
Delhi	*226*	*4.02*	*5393*	*95.98*	*5619*
J & K	*25555*	*88.72*	*3250*	*11.28*	*28805*
Ladakh	*914*	*93.46*	*64*	*6.54*	*978*
Lakshadweep	*38*	*100.00*	*0*	*0.00*	*38*
Puducherry	*394*	*53.53*	*342*	*46.47*	*736*
Grand Total	*27877*	*74.77*	*9408*	*25.23*	*37285*

(Note : A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir)

This table 4 illustrates the distribution of schools between rural and urban areas across the Union Territories of India, highlighting significant disparities in educational infrastructure. Jammu & Kashmir has the highest percentage of rural schools at 88.72%, while Chandigarh and Delhi have the most urban-centric distribution, with 100% and 95.98% of their schools located in urban areas, respectively. Ladakh and Lakshadweep also exhibit a strong rural presence. The data underscores the urban-rural divide in educational resources, which is critical for informing policy aimed at achieving balanced educational development across these regions.

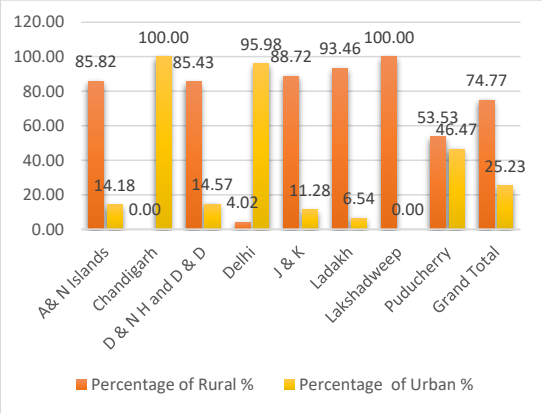

Fig 1 : Distribution of schools between rural and urban areas across the Union Territories of India

Table 5 - Availability of Electricity and Solar Panels in Schools Across Union Territories in India

Name of union territories	*Total No. of Schools*	*Sum of Electricity*	*Sum of Functional Electricity*	*Percentage %*	*Sum of Solar Panel*	*Percentage %*
A & N Islands	*416*	*386*	*386*	*100.00*	*19*	*4.57*
Chandigarh	*233*	*233*	*233*	*100.00*	*161*	*69.10*
D & N H and D & D	*460*	*460*	*460*	*100.00*	*64*	*13.91*
Delhi	*5619*	*5619*	*5619*	*100.00*	*1712*	*30.47*
J & K	*28805*	*22054*	*21011*	*95.27*	*3479*	*12.08*
Ladakh	*978*	*913*	*902*	*98.80*	*211*	*21.57*
Lakshadweep	*38*	*38*	*38*	*100.00*	*2*	*5.26*
Puducherry	*736*	*736*	*736*	*100.00*	*34*	*4.62*
Grand Total	*37285*	*30439*	*29385*	*96.54*	*5682*	*15.24*

(Note : A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir)

This table 5 presents data on the availability of electricity and functional solar panels in schools across various Union Territories of India. Nearly all schools have access to electricity, with a functional rate of 96.54%. Jammu & Kashmir, while having the highest number of schools, shows a slightly lower functional electricity rate at 95.27%. Solar panel usage varies significantly, with Chandigarh leading at 69.10%, while other regions like Lakshadweep and A & N Islands show minimal reliance on solar energy. This data highlights both the extensive electrification of schools and the varying adoption of renewable energy sources across Union Territories.

Table 6 - Availability of Ramps and Newspapers in Schools Across Union Territories in India

Name of union territories	*Total No. of Schools*	*Sum of Ramps*	*Ramps %*	*Sum of Newspaper*	*Newspaper %*
A& N Islands	*416*	*261*	*62.74*	*140*	*33.65*
Chandigarh	*233*	*204*	*87.55*	*202*	*86.70*
D & N H and D & D	*460*	*427*	*92.83*	*184*	*40.00*
Delhi	*5619*	*5619*	*100.00*	*3506*	*62.40*
J & K	*28805*	*11334*	*39.35*	*6213*	*21.57*
Ladakh	*978*	*770*	*78.73*	*132*	*13.50*
Lakshadweep	*38*	*36*	*94.74*	*20*	*52.63*
Puducherry	*736*	*481*	*65.35*	*484*	*65.76*
Grand Total	*37285*	*19132*	*51.31*	*10881*	*29.18*

(Note : A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir)

This table 6 provides an overview of the availability of ramps for accessibility and newspapers for educational resources in schools across Union Territories in India. The data reveals a wide range in accessibility, with Delhi achieving 100% ramp availability, while Jammu & Kashmir lags at 39.35%. Similarly, the presence of newspapers in schools varies, with Chandigarh and Puducherry having high availability at 86.70% and 65.76%, respectively, compared to a lower percentage in Ladakh and Jammu & Kashmir. These figures highlight disparities in both physical accessibility and the provision of informational resources, emphasizing the need for targeted improvements.

Table 7 - Availability of Libraries, Reading Corners, Book Banks, and Librarians Across Different School Categories in Union Territories

Name of union territories	Sum of Library or Reading Corner or Book Bank	Sum of Librarian	Sum of Total No. of Schools	Librarian in Libraries %
Department of Education	19423	1780	26271	9.16
Government Aided	320	159	326	49.69
Jawahar Navodaya Vidyalaya	36	32	36	88.89
Kendriya Vidyalaya / Central School	98	90	98	91.84
Local body	1670	89	1670	5.33

Madarsa recognized (by Wakf board/Madarsa Board)	54	15	71	27.78
Madarsa unrecognized	6	0	8	0.00
Other Central Govt. Schools	3	3	3	100.00
Private Unaided (Recognized)	7579	2850	8740	37.60
Social welfare Department	7	1	8	14.29
Unrecognized	36	6	54	16.67
Grand Total	29232	5025	37285	17.19

This table 7 details the availability of libraries, reading corners, or book banks, as well as the presence of librarians across various school categories in Union Territories of India. The data reveals a significant disparity, with Kendriya Vidyalayas and Jawahar Navodaya Vidyalayas exhibiting the highest library and librarian availability at 91.84% and 88.89%, respectively. In contrast, Department of Education schools, which comprise the majority of total schools, show a much lower percentage at 9.16%. The overall availability of Librarians across all school categories stands at 17.19%, highlighting the need for enhanced resource allocation to improve library services and access to librarians across all educational institutions.

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Table 8 - Availability of Computers and Internet Access Across Union Territories in India

Name of union territories	Total Schools	Sum of Computer Available	% of Computers in Schools	Sum of Internet	% of Internet in Computers	% of Internet in Schools
A& N Islands	416	278	66.83	187	67.27	44.95
Chandigarh	233	233	100.00	230	98.71	98.71
D & N H and D & D	460	410	89.13	264	64.39	57.39
Delhi	5619	5619	100.00	5619	100.00	100.00
J & K	28805	9631	33.44	8566	88.94	29.74
Ladakh	978	452	46.22	418	92.48	42.74
Lakshadweep	38	38	100.00	37	97.37	97.37
Puducherry	736	733	99.59	724	98.77	98.37
Grand Total	37285	17394	46.65	16045	92.24	43.03

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(Note : A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir)

This table 8 presents data on the availability of computers and internet access across schools in various Union Territories of India. The figures illustrate significant variation in the penetration of technology within

educational institutions. While Delhi, Lakshadweep, and Chandigarh exhibit full computer availability, Jammu & Kashmir shows a considerably lower percentage at 33.44%. Internet access in schools follows a similar pattern, with high connectivity in Delhi and Chandigarh but much lower levels in regions like Jammu & Kashmir and Ladakh. The overall percentage of schools with computers stands at 46.65%, while ~~and~~ 43.03% of all schools have internet access. This data highlights the digital divide and underscores the need for targeted interventions to enhance technological infrastructure across Union Territories.

Table 9 - Distribution of School Management Types Across Union Territories in India

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School Management	A & N Islands	Chandigarh	D & NH and D & D	Delhi	J & K	Ladakh	Lakshadweep	Puducherry	Total	%
Department of Education	329	116	382	1047	23117	832	36	412	26271	70.46
Government Aided	2	7	8	247	1	28		33	326	0.87
Jawahar Navodaya Vidyalaya	3	1	3	2	20	2	1	4	36	0.10
Kendriya Vidyalaya / Central School	2	4	2	46	36	3	1	4	98	0.26
Local body	8		1	1661					1670	4.48
Madarsa recognized (by Wakf board/Madarsa Board)			1		70				71	0.19
Madarsa unrecognized		3			5				8	0.02
Other Central Govt. Schools		2				1			3	0.01
Private Unaided (Recognized)	72	76	63	2610	5526	112		281	8740	23.44
Social welfare Department				6				2	8	0.02
Unrecognized		24			30				54	0.14
Grand Total	**416**	**233**	**460**	**5619**	**28805**	**978**	**38**	**736**	**37285**	

(Note : A & N Islands = Andaman & Nicobar Islands, D & N H and D & D = Dadra & Nagar Haveli and Daman & Diu, J & K = Jammu & Kashmir)

This table 9 outlines the distribution of different types of school management across Union Territories in India. The data shows that the Department of Education manages the majority of schools, comprising 70.46% of the total, with a particularly high concentration in Jammu & Kashmir (23117 schools). Private Unaided (Recognized) schools account for 23.44% of the total, with a notable presence in Delhi. Other management types, including Government Aided, Kendriya Vidyalaya, and Madarsa schools, represent a smaller proportion. This distribution highlights the predominance of Department of Education institutions and the varied presence of other management categories across the regions.

There is a major educational infrastructure gap in literacy levels of the Union Territories. Jammu & Kashmir and Ladakh, which comprise 79.88% of schools, account for the lowest level of literacy at 67.16%. Lakshadweep, of whom schools account for only 0.1%, has furnished the highest literacy rate at 91.85%. Delhi will certainly pose an impressive high level of literacy at 86.21% despite it accounting for 15.07% of all the schools. The data really shows that there is still a major urban-rural divide, with overall literacy often being much higher and educational facilities more available in the urban areas than in the rural regions. The analysis highlights the need for targeted interventions to address the disparities in educational infrastructure and literacy rates across regions, emphasizing that a higher number of schools does not always correlate with better educational outcomes.

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1. You need to support your findings with existing literatures vis-a-vis your objectives and your indicators, even if it will be against your findings.
2. You did not measure academic outcomes in your report, literacy could not have been sufficient to be used to conclude for academic outcomes. They are two different entities and indicator. So probably your academic outcomes could be changed to literacy in the body of your report.

CONCLUSION:

The survey produced an overall analysis of educational infrastructure and literacy trends across India's Union Territories, with notable regional disparities in place. Indeed, while the educational infrastructure is highly concentrated in schools in Jammu & Kashmir and Ladakh, the lowest rates of literacy are witnessed in these regions-meaning in fact a disconnection between educational infrastructure and academic outcomes. Conversely, Lakshadweep, with the lowest number of schools, has shown maximum literacy rates, which clearly explains that a small number of schools can even yield great educational outcomes when it comes coupled with good infrastructures. The urban-rural divide is evident, with urban localities having a higher literacy and better resource provisions compared to their rural counterparts. Such disparities need direct interventions aiming at improving infrastructures and resources for education, especially in rural and backward areas. Addressing the issues will be critical to realizing educational equity and improving overall educational outcomes across Union Territories. The implications drawn from the findings highlight the need for policy approaches tailored to each region, strategic investments and resource allocation to bridge the found gaps so that each region benefits from improved educational opportunities and resources.

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