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Enrollment of Children with Special Needs in Elementary Schools: A Comparative Study of Punjab and Chandigarh

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Abstract

This paper presents a comparative study of the enrollment trends of Children with Special Needs (CWSN) in elementary schools of Punjab and Chandigarh from 2009 to 2022. Utilizing data from the Unified District Information System for Education (UDISE and UDISE+), it investigates longitudinal shifts in enrollment patterns, growth rates, and policy responsiveness. The analysis reveals a substantial and volatile rise in enrollment in Punjab, particularly following 2018, attributed to intensified household surveys and expanded deployment of special educators under the Samagra Shiksha initiative. In contrast, Chandigarh, despite its urban advantage and early progress, experienced a consistent decline in enrollment post-2014, pointing to under-identification, static resource allocation, and administrative inertia. The COVID-19 pandemic further exposed the fragility of inclusive education systems in both regions. The study underscores that enrollment, while foundational, is only the first step toward genuine inclusion. It concludes with actionable recommendations for institutionalizing identification processes, enhancing special educator availability, and embedding resilience into educational planning to ensure sustainable and equitable access for all learners with disabilities.

Inclusive Education, Children with Special Needs (CWSN), Elementary Schools, Punjab, Chandigarh, Enrollment Trends, UDISE+, Educational Policy, Comparative Analysis

Introduction

Inclusive education is a globally recognized approach to ensure that all children regardless of their physical, intellectual, social, emotional, linguistic, or other conditions can participate meaningfully in learning. India has aligned its education system with this principle through landmark initiatives such as the Right of Children to Free and Compulsory Education (RTE) Act, 2009, and the National Education Policy (NEP), 2020, which emphasize equity, access, and inclusive practices.

Punjab and Chandigarh, though geographically adjacent, differ significantly in terms of administrative structures, socio-economic

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profiles, and educational governance. This makes them suitable case studies for understanding how regional disparities influence the implementation of inclusive

education, especially for children with special needs (CWSN) at the elementary level.

Despite government efforts under schemes like Sarva Shiksha Abhiyan (SSA), the Integrated Education for Disabled Children (IEDC), and Samagra Shiksha, disparities remain in how CWSN are enrolled and retained in mainstream schools. Enrollment data offers a critical though limited lens to assess the status of inclusion. While mere admission into schools does not guarantee genuine participation or learning, it is a necessary first step toward ensuring that children with disabilities are not left out of the education system altogether.

This paper thus explores enrollment trends of CWSN in elementary education in Punjab and Chandigarh between 2009 and 2022, with a focus on identifying patterns, highlighting gaps, and drawing actionable insights to inform policy and practice.

Conceptual Framework

The foundation of this study lies in the understanding of inclusive education as more than just the physical placement of children with special needs in mainstream classrooms. It is a holistic approach that recognizes diversity as a strength and ensures that all learners, including children with disabilities, are provided with equitable opportunities to learn and thrive.

Landsberg, Krüger, and Swart (2005) define inclusive education as a dynamic process that enables schools to respond positively to learner diversity and provide meaningful participation for all students. Similarly, Barton (1997) emphasizes that inclusion is not merely about access, but also about fostering a sense of

belonging, identity, and achievement for every child.

In this context, enrollment acts as a gateway to inclusion. It signals institutional intent and policy reach. However, true inclusion extends beyond enrollment—it demands appropriate curriculum adaptations, teacher preparedness, assistive support, and ongoing assessment to ensure every child can participate effectively. By examining the enrollment trends of CWSN, this study attempts to evaluate whether foundational steps toward inclusive education are being implemented consistently across two distinct regions: Punjab and Chandigarh.

Objectives

The present study seeks to explore and compare the enrollment patterns of Children with Special Needs (CWSN) in elementary schools of Punjab and Chandigarh over a span of twelve academic years (2009–2022). The specific objectives are as follows:

1. To study the enrollment rate of CWSN in Punjab.
2. To study the enrollment rate of CWSN in Chandigarh.
3. To compare the enrollment rates of CWSN between Punjab and Chandigarh.

Methodology

This study adopts a quantitative, descriptive-comparative research design to analyze the trends in enrollment of Children with Special Needs (CWSN) in elementary schools (Grades I to VIII) of Punjab and Chandigarh over the period 2009–2022. The data has been sourced from official records of the **Unified District**

Information System for Education (UDISE)

and **UDISE+**, which are annually compiled by the Ministry of Education, Government of India.

The following statistical tools and methods were used:

- **Percentage change** was calculated year-on-year to observe short-term enrollment variation.
- **Compound Annual Growth Rate (CAGR)** was used to assess long-term growth over the 12-year period.

- **Standard deviation and median growth rates** were used to evaluate volatility and central tendencies in the enrollment patterns.
- **Comparative analysis** was undertaken to highlight differences and similarities between Punjab and Chandigarh, with attention to socio-administrative and policy contexts.

Objective 1: To study the enrollment rate of CWSN in Punjab

Table 1.1.T: Year wise Enrollment of CWSN in Punjab

Year	Enrollment (1-5)	Enrollment (6-8)	Total Enrollment	Change	Percentage Change	
2021-22	26007	21079	47086	-10924	-23%	Decrease
2020-21	26792	21522	58010	4611	8.6%	Increase
2019-20	32478	20921	53399	5085	10.5%	Increase
2018-19	35757	22253	48314	43161	837%	Increase
2016-17	2512	2641	5153	-723	-12.3%	Decrease
2015-16	2881	2995	5876	-1449	-19.7%	Decrease
2014-15	4301	3024	7325	-1135	-13.4%	Decrease
2013-14	5553	2907	8460	-1955	-18.7%	Decrease
2012-13	7247	3168	10415	6005	136%	Increase
2011-12	3026	1384	4410	2273	106%	Increase
2010-11	1272	865	2137	838	66%	Increase
2009-10	974	325	1299			

* Data of 2017-18 not available as student data collection discontinued in 2017-18

Figure 1.1.F: Year wise Enrollment of CWSN in Punjab

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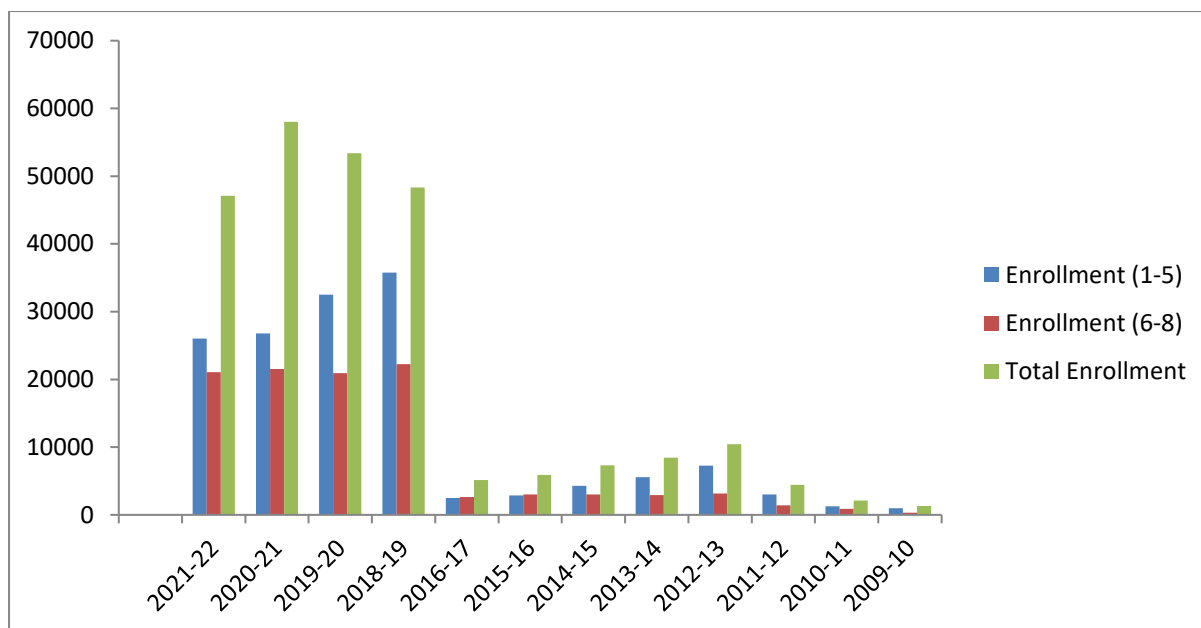
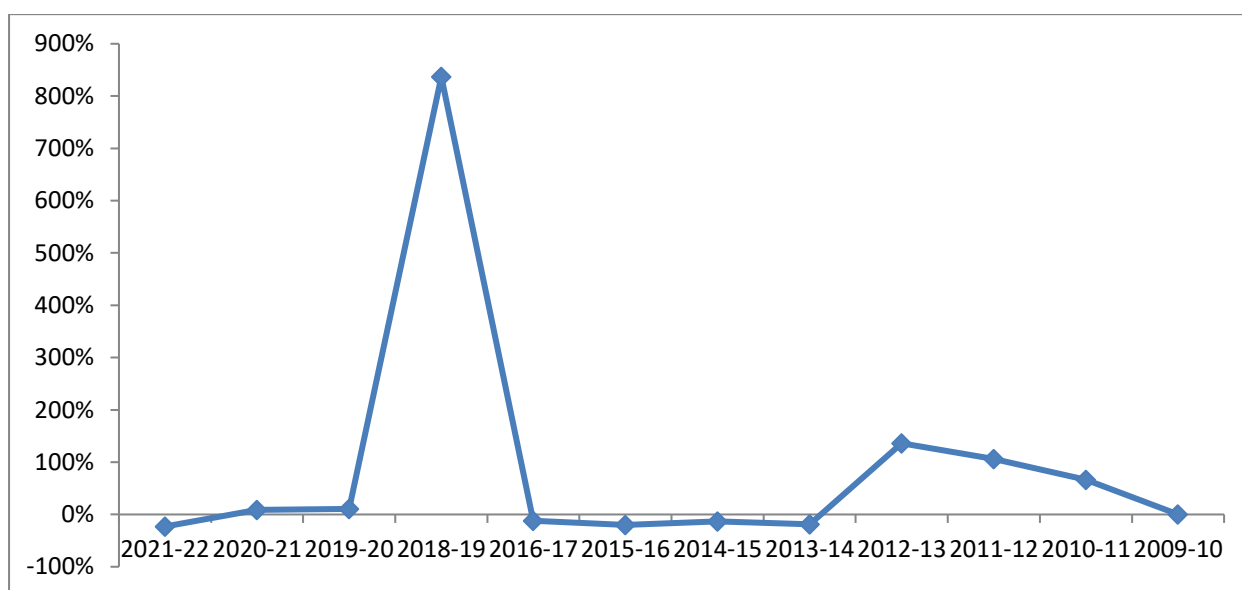


Figure 1.2.F: Year wise Percentage Change in Enrollment of CWSN in Punjab



Analysis of Table 1.1.T, Figure 1.1.F, and Figure 1.2.F shows that CWSN enrollment in Punjab's elementary schools increased from 2009 to 2013 and again from 2016 to 2021. However, the data also highlights a decline in enrollment between 2013 and 2017, which suggests challenges in maintaining consistent enrollment during this period. This fluctuation underscores the need for sustained efforts to ensure continuous progress in the inclusion of CWSN in Punjab's elementary education system.

Objective 2: To study the enrollment rate of CWSN in Chandigarh.

Table 1.2.T: Year wise Enrollment of CWSN in Chandigarh

Year	Enrollment (1-5)	Enrollment (6-8)	Total Enrollment	Change	Percentage Change	
2021-22	919	1418	2337	-6	-0.256%	Decrease
2020-21	1004	1339	2343	- 841	-35.89%	Decrease
2019-20	1441	1743	3184	-315	-9.89%	Decrease
2018-19	1566	1933	3499	-131	-3.74%	Decrease
2016-17	1532	2098	3630	-279	-7.69%	Decrease
2015-16	1729	2180	3909	-691	-1.77%	Decrease
2014-15	2075	2525	4600	101	2.19%	Increase
2013-14	2358	2141	4499	187	4.1%	Increase
2012-13	1716	2596	4312	2965	68.75%	Increase
2011-12	698	649	1347	-32	-2.38%	Decrease
2010-11	685	694	1379	411	29.8%	Increase
2009-10	485	483	968			

* Data of 2017-18 not available as student data collection discontinued in 2017-18

Figure 1.3.F: Year wise Enrollment of CWSN in Chandigarh

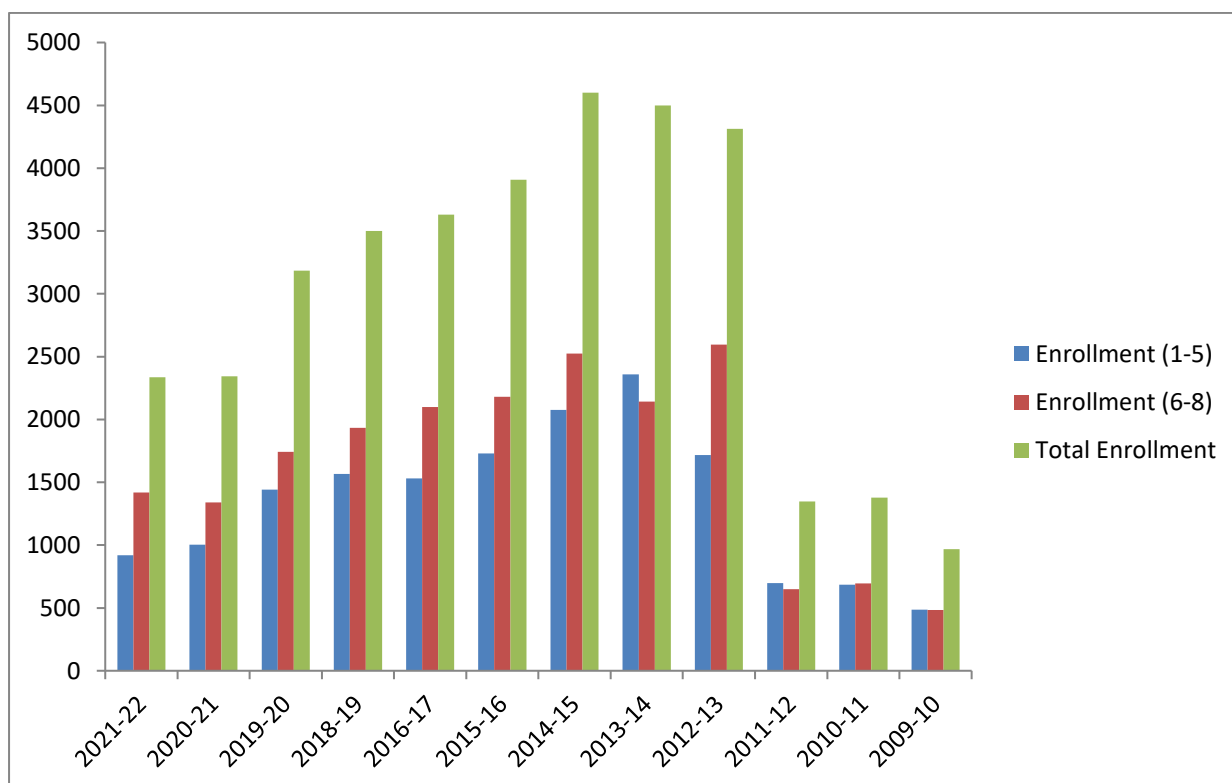
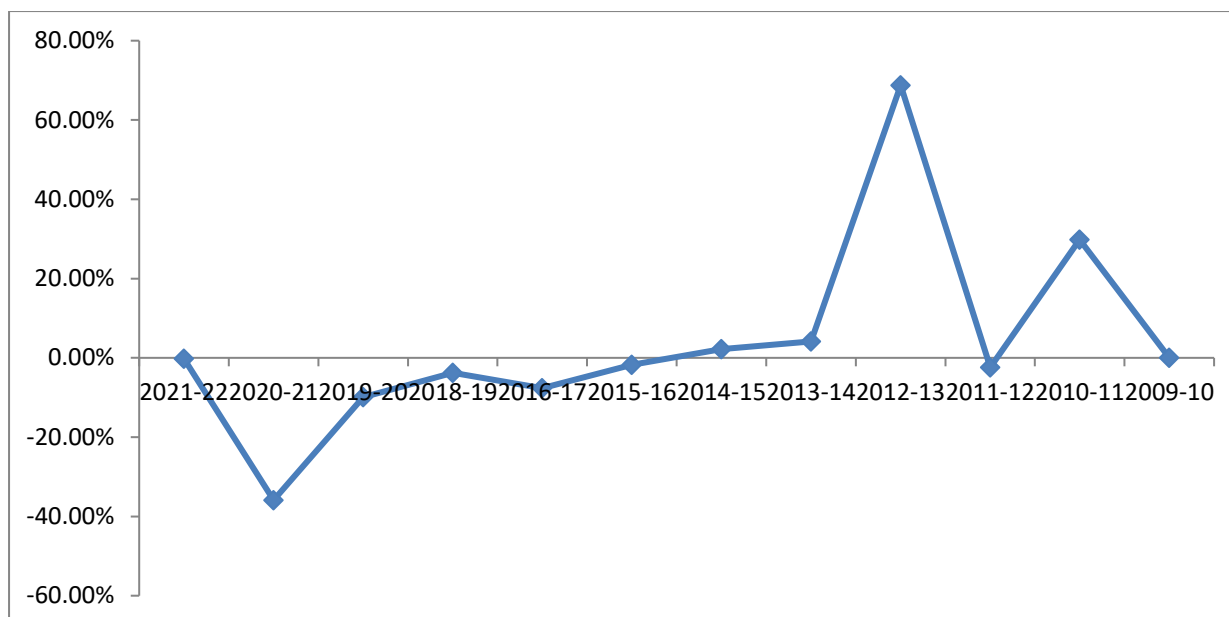


Figure 1.4.F: Year wise Percentage Change in Enrollment of CWSN in Chandigarh

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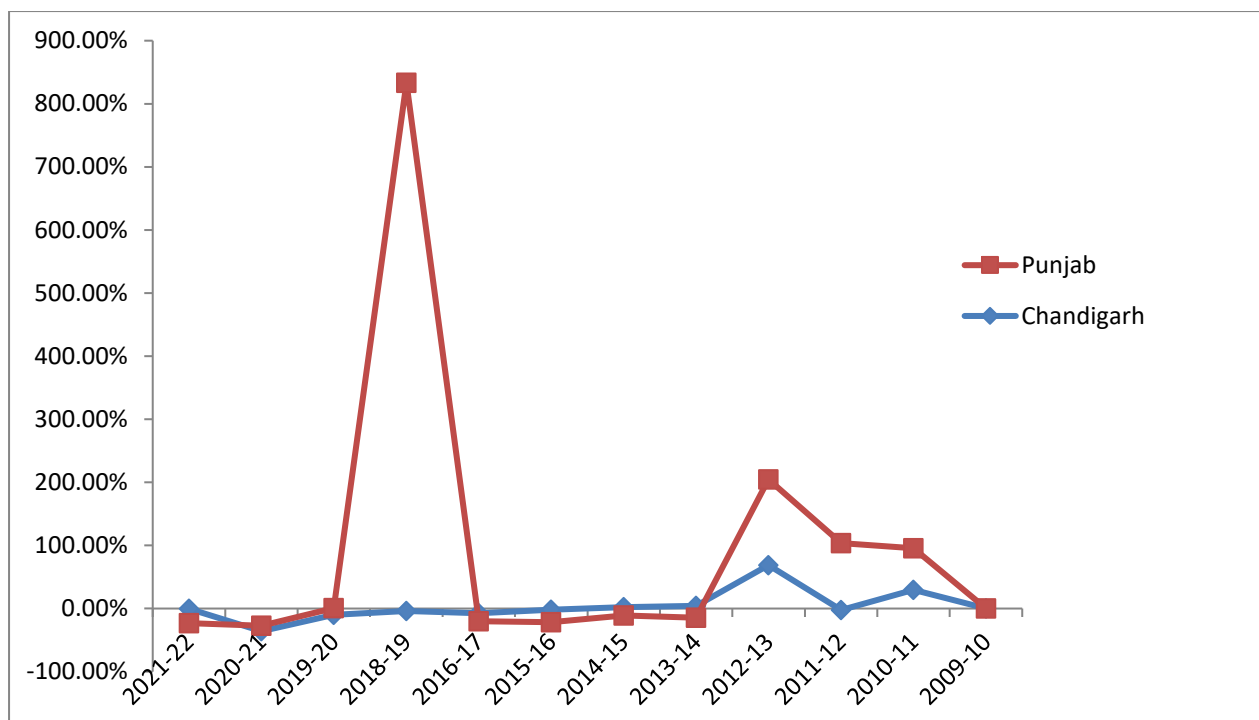
An analysis of Table 1.2.T, Figure 1.3.F, and Figure 1.4.F reveals that the enrollment of Children with Special Needs (CWSN) in Chandigarh increased from 2009 to 2014, with the exception of the 2011-12 academic years, which saw a slight decrease of 2.38%. However, starting in 2014, there has been a continuous decline in CWSN enrollment, with the percentage of decrease worsening each year. Notably, while the decrease in 2015 was only 1.77%, by 2020, the decline had escalated to 35.89%, a trend that is particularly concerning and calls for urgent attention.

Objective 3: To compare the enrollment rate of CWSN in Punjab and Chandigarh.

The enrollment rates of CWSN in Punjab and Chandigarh were calculated and plotted in a line diagram. As shown in Figure 1.5.F, the enrollment rate in Punjab's elementary schools is consistently higher than that in Chandigarh's. Although there was a dip in enrollment in Punjab between 2013 and 2016, the rate surged by 837% in 2018, reflecting a significant increase.

Figure 1.5.F: Comparison of the Rate of Enrollment of CWSN in Punjab and Chandigarh

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Analysis of Enrollment Data:

- Punjab:** Data from UDISE and UDISE+ reports indicate an overall increase in the enrollment of children with special needs (CWSN) in elementary schools between 2009 and 2013, as well as from 2016 to 2021, despite experiencing intermittent declines. These fluctuations reflect the varying impact of government interventions designed to promote universal elementary education.
- Chandigarh:** Enrollment data from UDISE and UDISE+ reports reveal an initial rise in the number of CWSN enrolled from 2009 to 2014, followed by a consistent decline thereafter. Notably, there was a significant drop of 35.89% in 2020, which raises concerns about the long-term sustainability of inclusive education efforts.

Comparative Analysis: Punjab vs Chandigarh

A detailed comparison of the enrollment patterns of Children with Special Needs (CWSN) in elementary schools between Punjab and Chandigarh (2009–2022) reveals contrasting trends in growth, consistency, and policy responsiveness.

1. Overall Enrollment Growth

- Punjab:** Enrollment increased from 1,299 in 2009–10 to 47,086 in 2021–22, registering a 3,525% rise, with a Compound Annual Growth Rate (CAGR) of approximately 34.9%.

- Chandigarh: Enrollment rose from 968 to 2,337 during the same period, reflecting a 141% increase, and a CAGR of only 7.6%.

2. Year-on-Year Volatility

- Punjab experienced considerable volatility, including a sharp spike in 2018–19 when enrollment jumped by over 800%, likely due to renewed survey efforts.
- Chandigarh, in contrast, showed less fluctuation, but its median trend was negative, with small year-on-year decreases after 2014.

3. Median Trend and Growth Stability

- Punjab's median annual growth was +8.6%, suggesting positive but uneven progress.
- Chandigarh recorded a –2.3% median annual change, indicating a persistent downward drift in enrollment.

4. Scale of Inclusion

By 2021–22:

- Punjab enrolled approximately 20 times more CWSN than Chandigarh.
- However, Punjab's general elementary student population is about 9 times larger, suggesting a higher rate of identification and/or inclusion.

5. Policy and Structural Drivers

Period	Punjab	Chandigarh	Likely Drivers
2009–2013	Gradual rise	Rapid early increase	SSA and RTE Act implementation
2013–2016	31% decline	Plateau and mild fall	Weakening data collection, transition lapses
2018–19	837% spike	Continued decline	Resumption of field surveys in Punjab; stagnant resource policies in Chandigarh
2020–21	23% drop	36% drop	COVID-19 lockdowns, migration, and school closures

6. Administrative and Educational Context

- Identification Practices: Punjab shifted to more active household-based surveys; Chandigarh relied more on school-reported categorization.
- Resource Allocation: Punjab deployed over 1,000 resource teachers under Samagra

Shiksha; Chandigarh's sanctioned positions remained static (~25).

- Urban vs Rural Dynamics: Punjab's rural context enabled broader community-based mobilization. Chandigarh's urban schooling system faced challenges from private school migration and underreporting in government institutions.

Discussion

The divergent enrollment patterns of Children with Special Needs (CWSN) in Punjab and Chandigarh are reflective of not only the quality of identification and reporting mechanisms but also the depth of institutional commitment to inclusive education.

Punjab's trajectory demonstrates the impact of targeted interventions and administrative reforms. The surge in CWSN enrollment in 2018–19 aligns with the resumption of intensive household surveys and strengthened implementation of the Samagra Shiksha Abhiyan, including the recruitment of special educators and better data tracking under UDISE+. However, the enrollment fluctuations—particularly the 23% drop in 2021–22—signal a dependency on episodic campaigns rather than sustained systemic change. These fluctuations may also be symptomatic of inconsistencies in data collection and categorization criteria.

Chandigarh's pattern, on the other hand, reflects stagnation despite its compact geography and better average schooling indicators. The post-2014 plateau and subsequent decline suggest administrative inertia, possibly compounded by a lack of targeted outreach and under-utilization of centrally sponsored schemes. The city's relatively small population base and heavy reliance on private schools may further obscure the accurate identification of CWSN, especially in underreported categories such as learning disabilities or mild mental retardation.

The COVID-19 pandemic exacerbated these challenges for both regions. School closures disrupted special education services, halted community-based identification drives, and limited access to assistive devices and individualized support. The sharp decline in enrollment in 2020–21 across both Punjab and Chandigarh reveals how fragile the infrastructure for inclusive education remains in times of crisis.

This analysis suggests that inclusion is not just a matter of access, but of infrastructure, policy continuity, and resilient systems. Punjab's periodic success offers valuable lessons in identification and mobilisation, while Chandigarh's decline highlights the risk of complacency in the absence of proactive interventions.

Conclusion and Recommendations

The twelve-year analysis of enrollment trends for Children with Special Needs (CWSN) in elementary schools across Punjab and Chandigarh reveals two distinctly different trajectories. Punjab demonstrated rapid and substantial growth, particularly from 2018 onward, suggesting effective mobilization, improved identification mechanisms, and policy-driven momentum. However, the irregular nature of this growth, including a sharp drop in 2021–22, points to systemic vulnerabilities and a reliance on short-term interventions.

In contrast, Chandigarh experienced a promising start but has since seen a steady decline in CWSN enrollment, particularly after 2014. This stagnation may be attributed to under-identification, lack of expansion in special educator deployment, and administrative inertia, despite the city's compact geography and relatively high educational infrastructure.

These contrasting patterns underscore a critical insight: enrollment alone is not a guarantee of inclusion, but it is an essential gateway. Sustained gains require structural reforms, consistent monitoring, and policy resilience, especially during external disruptions like the COVID-19 pandemic.

Key Recommendations

1. Institutionalized Identification and Data Tracking : States and UTs should conduct annual household-based surveys for identifying CWSN, integrating them seamlessly with UDISE+ workflows to ensure up-to-date and accurate reporting. Special attention must be given to underrepresented disability categories.

2. Strengthen Special Educator Deployment: A minimum ratio of special educators to CWSN should be mandated under Samagra Shiksha, with states like Chandigarh required to revise recruitment ceilings and training initiatives in line with rising needs.
3. Build Crisis-Resilient Inclusive Infrastructure: The pandemic revealed major gaps in continuity of education for CWSN. States should develop blended learning kits, mobile therapy units, and allocate contingency funds within Annual Work Plans to ensure uninterrupted access during emergencies.
By focusing on these core areas—identification, staffing, and system resilience—educational authorities in both Punjab and Chandigarh can convert fluctuating enrollment trends into a sustained pathway toward inclusive, equitable, and quality education for all.

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