

# Quality of Learning in Primary Education

## A District-level Comparison of Kerala and West Bengal

ANURUPA MUKHERJEE\* AND PRAVAT KUMAR KURI\*

### Abstract

*The quality of learning remains a widely debated issue in the contemporary school education system. Despite significant progress in enrolment due to various policy interventions, the persistent challenge is the decline in learning levels among children across age groups. This paper assesses the learning quality of primary school children using ASER data (2006–2024) for the districts of Kerala and West Bengal. Four and two key learning indicators for the periods 2006–2016 and 2018–2024, respectively, are used to evaluate grade-level learning outcomes. A Learning Achievement Index has been constructed using Principal Component Analysis (PCA) to provide a clearer picture of learning trends, and inter-district disparities have been examined accordingly. A correlation analysis is also undertaken to identify any significant associations between the index and trends in the private and public-school enrolment.*

**Keywords:** Primary Education, Private School Enrolment, Learning Achievement, West Bengal, Kerala, ASER

### INTRODUCTION

India's education system holds a distinct place in the global landscape and has witnessed remarkable progress since independence. Improvements in infrastructure, expansion of enrolment, the proliferation of primary to higher secondary schools, and increased financial allocations

have drawn attention at various points in time. However, despite these developments, considerable variation persists among states with respect to educational achievement.

Over the years, several initiatives have been undertaken—both nationally and at the state level—to enhance children's participation in schooling

\*Research Scholar, Department of Economics, The University of Burdwan, West Bengal

through various government-sponsored schemes. Yet, despite notable progress, concerns remain regarding the pace at which class-appropriate learning is being imparted. The no-detention policy guarantees grade promotion, but in practice, many students require additional academic support to meet the expectations of the subsequent grade (Ahsan *et al.*, 2018). A distinctly unequal learning pattern emerges within classrooms—students who fall behind tend to remain behind, whereas those progressing well continue to advance. It is noteworthy that a significant proportion of low-performing students are first-generation learners.

Government schools, envisioned as the primary learning spaces for disadvantaged children, frequently struggle to provide adequate individual attention due to challenges such as irregular student attendance and the dual burden of academic and administrative responsibilities placed on teachers (Kumar *et al.*, 2005). In several instances, teacher absenteeism disproportionately impacts students from marginalised communities—especially those from backward castes—causing a severe setback in their learning progression (Kremer *et al.*, 2005).

Student absenteeism itself remains a major contributor to low learning levels. Factors such as maternal illiteracy, parental apathy, financial instability, poor accessibility to schools, and inadequate infrastructure often

contribute to irregular attendance. Household characteristics, educational infrastructure, and the quality of school administration, collectively influence learning achievement, dropout rates, and attendance (Jalan, 2010). With declining learning outcomes, reliance on private tuition has increased significantly. However, this trend further disadvantages economically weaker families, reinforcing Das's (2013) assertion that the inadequacy of government school infrastructure is making parallel systems—private schools and private tutors—inevitable.

The expansion of private tutoring, driven by the need to compensate for deficiencies in school-based learning, has sharply increased the financial burden on families. Consequently, children from marginalised households remain excluded from both private schooling and supplementary tuition, worsening learning inequities (Rana *et al.*, 2005). The COVID-19 pandemic intensified this divide, with a 40 per cent surge in tuition rates among school-going children, deepening the gap between “tuition-haves” and “tuition-have-nots” (ASER Report, 2021).

A significant disparity is also evident in the learning outcomes of students attending government versus private schools. Private schools benefit from favourable pupil-teacher ratios, lower teacher absenteeism, better physical infrastructure, and greater parental capacity to meet schooling costs. In rural India, private schools often utilise lower teacher salaries to optimise staffing, reduce multigrade

teaching, and maintain more manageable pupil-teacher ratios (Muralidharan and Kremer, 2007). As private schools continue to offer superior infrastructural and instructional resources, the shortcomings of government schools become increasingly pronounced. Well-designed school buildings, clean classrooms, and child-friendly environments foster enthusiasm for learning and strengthen parental confidence in school quality. As a result, the learning gap between government and private institutions persists.

Kerala, with its exceptional literacy rates and extensive institutional coverage, stands out as a leading example of educational excellence. In both Kerala and West Bengal, the total number of primary schools has grown steadily over the past decade. However, Kerala's rise is attributed largely to the expansion of private schools, whereas in West Bengal, government schools continue to outnumber private schools throughout the study period. This paper presents a comparative analysis of primary education in these two states—West Bengal and Kerala, which has emerged as a model of educational achievement—covering the period from 2006 to 2024.

## OBJECTIVES

The specific objectives of the study are as follows:

- To compare state-specific learning achievements.
- To examine inter-district variations in learning achievements.

- To analyse the decadal association between the Learning Achievement Index and enrolment in the government and private primary schools.

## SCOPE OF THE STUDY

Learning achievement in primary education has become an important area of contemporary educational research. Most existing Indian studies in this domain remain broadly aggregative, with limited attention to district-level comparisons across states. Only a few studies have attempted to compare two states by examining intra-state district-specific learning patterns.

This paper contributes to this gap by analysing the learning status of primary school children using ASER data for the districts of Kerala and West Bengal over the period 2006–2024. The study relies exclusively on secondary data sources.

The Annual Status of Education Report (ASER) is a large-scale, nationally representative survey that provides insights into schooling status and basic reading and arithmetic skills of children aged 5–16 across rural districts and states in India. It remains one of the most widely used datasets for assessing foundational learning outcomes.

## METHODOLOGY

To evaluate district-wise learning outcomes, four indicators were

selected for children enrolled in Grades 1–5 for the period 2006–16:

- $LL_1$ : Percentage of children (Grades 1–2) who can read letters, words, or more.
- $LL_2$ : Percentage of children (Grades 1–2) who can recognise numbers (1–9) or more.
- $LL_3$ : Percentage of children (Grades 3–5) who can read Level 1 (Grade 1) text or more.
- $LL_4$ : Percentage of children (Grades 3–5) who can perform subtraction or a more advanced arithmetic operation.

These four indicators were combined using Principal Component Analysis (PCA) to construct the Learning Achievement Index ( $LAI_1$ ) for the period of 2006–16.

For the period of 2018–24, two indicators were used, depending on the availability of data:

- $LL_5$ : Percentage of children (Grades 3–5) who can read Grade 2 level text.
- $LL_6$ : Percentage of children (Grades 3–5) who can perform at least subtraction.

These two indicators were combined using PCA to construct the Learning Achievement Index ( $LAI_2$ ) for 2018–24.

Using the median value, districts were categorised as best or worst performers. To investigate the district-level disparities, the Coefficient of Variation (CV) was computed based on the LAIs. Finally, Bivariate (Pearson) Correlation Analysis was

conducted between district-wise LAIs and the percentage of primary school children enrolled in the government and private schools for selected years.

This analysis examines whether the recent increase in private school enrolment or the continued presence of government schools is more strongly associated with learning achievement in primary education.

## MAIN FINDINGS

### Section 1

#### *State Comparison of Learning Levels—Trends Over Time*

State-level comparisons for the period 2006–16 were undertaken to examine the learning levels of children in Grades 1–2 and Grades 3–5. For each grade group, two key indicators were used:

- one to assess reading proficiency, and
- one to evaluate basic arithmetic skills.

These indicators provide a clear understanding of the foundational learning trends across the two states, enabling a comparative analysis of how children in Kerala and West Bengal have performed over the decade. By observing changes over time, the analysis captures both improvements and persistent gaps in early reading and arithmetic competencies among primary school children.

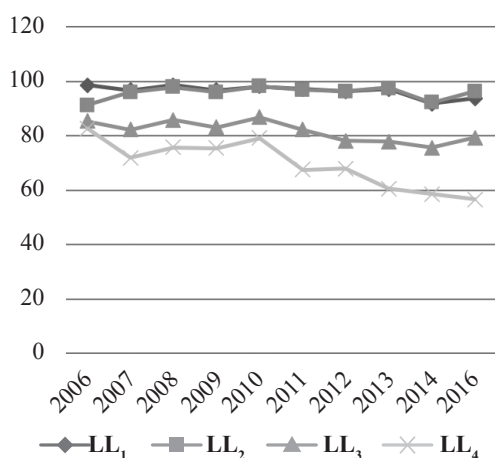


Fig. 1: Learning Trend in Kerala

Source: ASER reports, 2006 to 2016

In 2014, approximately 92 per cent of children in Grades 1–2 in Kerala, demonstrated basic reading and numeracy skills, whereas the corresponding figure for West Bengal stood at 80 per cent. While numeracy levels for this age group remained relatively stable in both states, a noticeable decline in reading proficiency has been observed in both Kerala and West Bengal since 2006. Among children in Grades 3–5, both states have experienced a significant deterioration in numeracy skills over the same period (see Figs 1 and 2).

Figs 3, 4, and 5 present a comparative illustration of reading and numeracy skills among primary-aged children in Kerala and West Bengal for the years 2006, 2010, and 2016.

In 2006, the learning status of the two states revealed distinct differences, particularly in arithmetic skills among children in Grades 1–2.

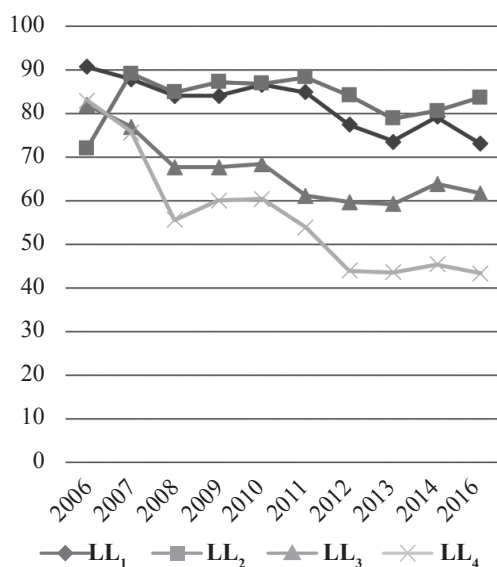


Fig. 2: Learning Trend in West Bengal

Source: ASER reports, 2006 to 2016

In Kerala, an impressive 100 per cent of these students could read letters, words, or higher-level text, marking a notable achievement. By contrast, students in Grades 3–5 in both states demonstrated broadly similar levels of reading and numeracy proficiency (see Fig. 3).

Although the two states displayed a significant gap in numeracy skills among Grades 1–2 students in 2006, this disparity narrowed considerably by 2010. However, during this period, reading proficiency declined among Grades 3–5 learners in both states—more sharply in West Bengal. Again numerical abilities worsened in both the states, with West Bengal showing a more pronounced drop. The no-detention policy is widely considered a contributing factor

to the substantial deterioration in numeracy skills among Grades 3–5 students across states (see Fig. 4).

By 2016, a steep decline in arithmetic proficiency among Grades 3–5 students had become evident. In this year, West Bengal recorded alarmingly low levels of numeracy achievement, with fewer than 50 per cent of students able to perform subtraction or more advanced tasks. Kerala performed

slightly better, with approximately 55 per cent achieving this benchmark (see Fig. 5).

Reading proficiency among Grades 3–5 also continued to decline in West Bengal, with the percentage dropping to 62 per cent by 2016. Kerala, though performing better at 79 per cent, also experienced a decline compared to 2010. Additionally, the gap between the two states in reading ability among Grades 1–2 students has widened over time.

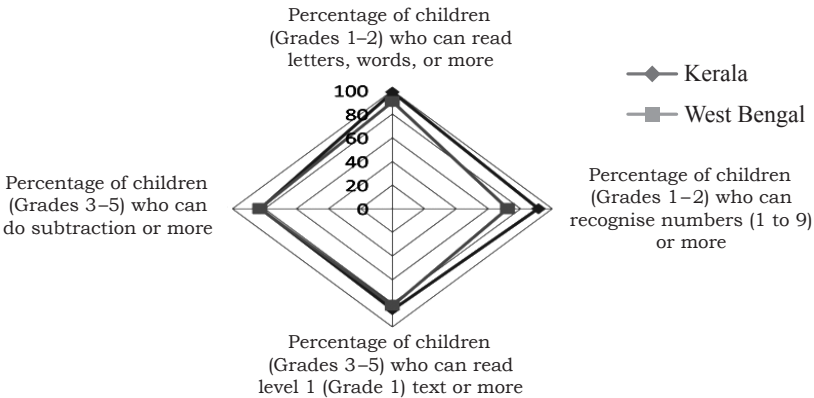


Fig. 3: Learning Status in Kerala and West Bengal, 2006  
Source: ASER reports, 2006

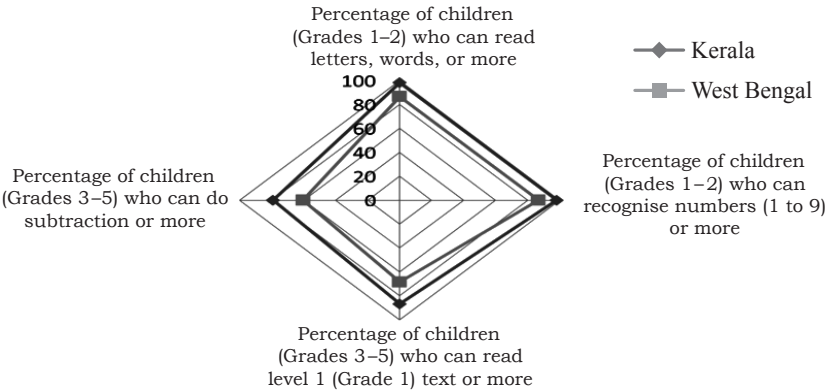


Fig. 4: Learning Status in Kerala and West Bengal, 2010  
Source: ASER reports, 2006

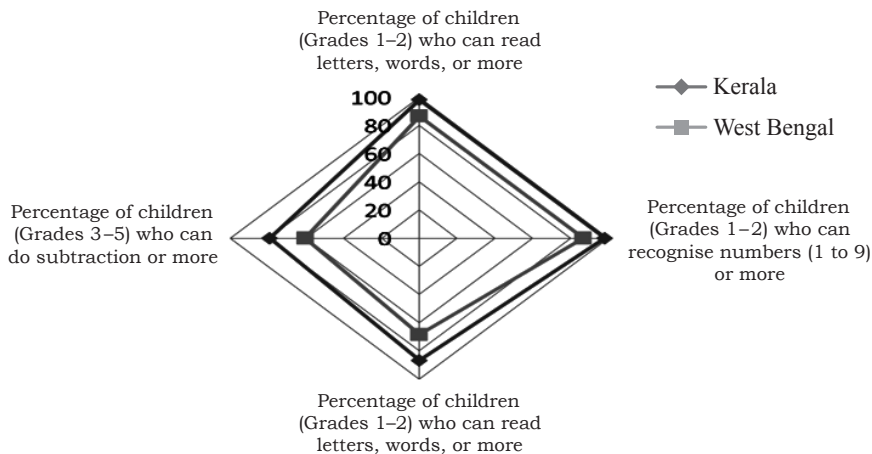


Fig. 5: Learning Status in Kerala and West Bengal, 2016  
Source: ASER reports, 2016

Furthermore, state-level comparisons of learning levels for the children in Grades 3–5 were undertaken for the years 2018, 2022, and 2024. One indicator each, for reading and arithmetic was used to assess the learning levels for these grades (see Figs 6, 7, and 8). In 2018, Kerala performed significantly better than West Bengal across all four indicators, with the gap being particularly pronounced in reading skills among students of Grade 5 (see Fig. 6). However, by the 2022, both the states recorded a decline in learning outcomes compared to 2018, especially in the reading and arithmetic skills among Grade 5 students. Notably, West Bengal marginally outperformed Kerala in division skills at the Grade 5 level during this year (see Fig. 7). In 2024, Kerala regained its position in reading skills for Grade 5, while

West Bengal demonstrated marked improvement in arithmetic skills for both Grades 3 and 5, surpassing Kerala in subtraction, as well as division in the latest year (see Fig. 8).

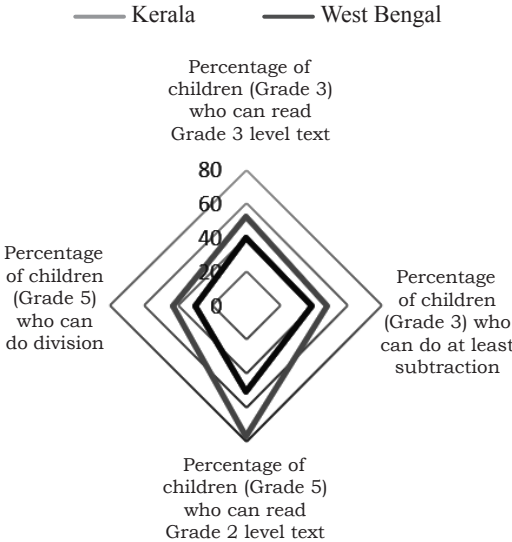


Fig. 6: Learning Status in Kerala and West Bengal, 2018  
Source: ASER reports, 2018

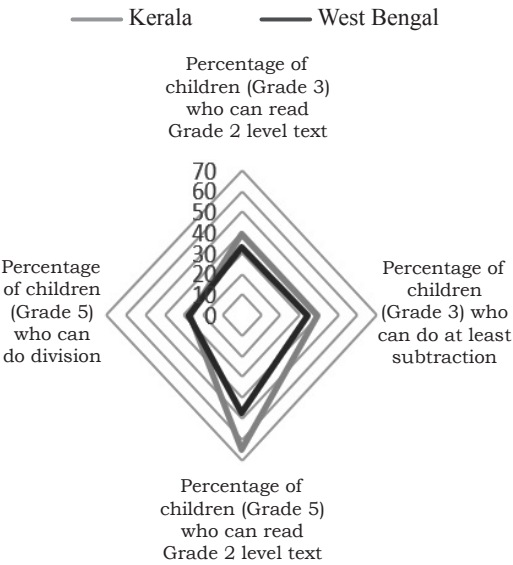


Fig. 7: Learning Status in Kerala and West Bengal, 2022

Source: ASER reports, 2022

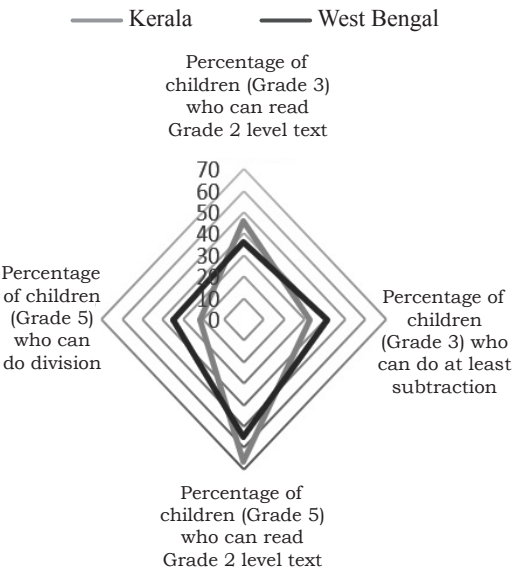


Fig. 8: Learning Status in Kerala and West Bengal, 2024

Source: ASER reports, 2024

## Section 2

### *Inter-district Variation of the Learning Achievement Index: Trends Over Time*

District-wise LAI scores were constructed using four learning indicators ( $LL_1$ ,  $LL_2$ ,  $LL_3$ , and  $LL_4$ ) to obtain a clearer picture of the developments in learning standards among the primary grade children for the years 2006, 2010, and 2016 (see Table 1). This index serves as a composite measure to capture the extent to which various government initiatives, aimed at improving foundational learning have translated into measurable outcomes over time.

Substantial inter-district variation is observed in the quality of learning in both states. Index values show deterioration for a majority of districts over the years. In 2016, Wayanad emerged as the most vulnerable district, with an index value of 0.1644, indicating poor learning development. An examination of individual indicators reveals that although 91 per cent of the Grades 1–2 children possess basic reading and numeracy skills, only 70 per cent and 44 per cent of Grades 3–5 children demonstrate basic reading and numeracy skills, respectively.

Kannur has consistently held the highest rank in terms of LAI since 2013. Other high-performing districts across all four learning indicators include Thiruvananthapuram, Alappuzha, and Kottayam. In West Bengal, the best-performing districts—

those consistently ranking high across all four indicators include Medinipur, Howrah, Hooghly, Bardhaman, and Darjeeling.

On the other hand, vulnerable districts in West Bengal include Uttar Dinajpur, Purulia, Jalpaiguri, and Cooch Behar, where very low percentage of children in Grades 1–2 and 3–5 exhibit basic reading and arithmetic skills. While learning outcomes have declined in both the best and worst

performing districts over the years, the pace of deterioration among the weakest districts is particularly alarming. It is disheartening to note that every district, in both states, has experienced a drastic decline in arithmetic skills among children in Grades 3–5, over the observed period.

District categorisation based on LAI<sub>1</sub> indicates that Thiruvananthapuram, Alappuzha, Kannur, and Kottayam consistently fall under the category

**Table 1**  
**LAI<sub>1</sub>—District-level Analysis of Kerala and West Bengal**

| <b>Kerala</b>      | <b>2006</b> | <b>2010</b> | <b>2016</b> | <b>West Bengal</b> | <b>2006</b> | <b>2010</b> | <b>2016</b> |
|--------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| Alappuzha          | 0.7675      | 0.7241      | 0.6252      | Bankura            | 0.2596      | 0.6147      | 0.7242      |
| Ernakulam          | 0.3534      | 0.5026      | 0.674       | South 24 Parganas  | 0.676       | 0.6535      | 0.6894      |
| Idukki             | 0.7808      | 0.0532      | 0.4444      | Birbhum            | 0.5411      | 0.2994      | 0.4695      |
| Kannur             | 0.6391      | 0.5743      | 0.8584      | North 24 Parganas  | 0.4973      | 0.5688      | 0.6862      |
| Kasargod           | 0.526       | 0.2447      | 0.2652      | Darjeeling         | 0.5242      | 0.7954      | 0.9232      |
| Kollam             | 0.6526      | 0.7884      | 0.5608      | Howrah             | 0.8878      | 0.7011      | 0.658       |
| Kottayam           | 0.9087      | 0.704       | 0.728       | Uttar Dinajpur     | 0.393       | 0.0623      | 0           |
| Kozhikode          | 0.6795      | 0.4748      | 0.622       | Jalpaiguri         | 0.2347      | 0.1832      | 0.3174      |
| Malappuram         | 0.4176      | 0.3343      | 0.4552      | Cooch Behar        | 0.279       | 0.3692      | 0.2898      |
| Palakkad           | 0.1041      | 0.327       | 0.4476      | Malda              | 0.5295      | 0.2354      | 0.3713      |
| Pathanamthitta     | 0.5619      | 0.5403      | 0.5332      | Murshidabad        | 0.7744      | 0.4568      | 0.4892      |
| Thiruvananthapuram | 0.6018      | 0.9375      | 0.678       | Nadia              | 0.437       | 0.5152      | 0.6672      |
| Thrissur           | 0.7219      | 0.6008      | 0.5956      | Dakshin Dinajpur   | 0.3201      | 0.6207      | 0.5184      |
| Wayanad            | 0.7835      | 0.2682      | 0.1644      | Medinipur          | 0.8895      | 0.929       | 0.8753      |
|                    |             |             |             | Purulia            | 0.6405      | 0.2877      | 0.3916      |
|                    |             |             |             | Hooghly            | 0.777       | 0.939       | 0.6217      |
|                    |             |             |             | Bardhaman          | 0.9487      | 0.6144      | 0.4704      |

Source: Calculation by the author using PCA

Note: Medinipur was bifurcated into Paschim Medinipur and Purba Medinipur in 2002; however, ASER data sets for 2006 and 2010 reports Medinipur as a single district. To maintain compatibility; the 2016 values were adjusted by estimating LL<sub>1</sub> and LL<sub>2</sub> through trend analysis and emerging LL<sub>3</sub> and LL<sub>4</sub> for two separate district datas from 2018 onwards.

of good performers. In contrast, Palakkad and Malappuram have persistently been classified as poor performers. Although Wayanad and Idukki were identified as good performers in 2006, both districts have subsequently shifted to the category of worst performers in later years. Kasargod has also emerged

as a consistently poor-performing district.

In the case of West Bengal, Medinipur, Howrah, Hooghly, and South 24 Parganas have been categorised as the best-performing districts based on their index values. Darjeeling and North 24 Parganas have also secured positions among

**Table 2**  
**District Categorisation in terms of LAI<sub>1</sub>—Kerala and West Bengal**

| <b>Kerala</b>      | <b>Best Performers</b>                                                                                             | <b>Worst Performers</b>                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 2006               | Kottayam, Wayanad, Idukki, Alappuzha, Thrissur, Kozhikode, Kollam                                                  | Palakkad, Ernakulam, Malappuram, Kasargod, Pathanamthitta, Thiruvananthapuram, Kannur                    |
| 2010               | Thiruvananthapuram, Kollam, Alappuzha, Kottayam, Thrissur, Kannur, Pathanamthitta                                  | Idukki, Kasargod, Wayanad, Palakkad, Malappuram, Kozhikode, Ernakulam                                    |
| 2016               | Kannur, Kottayam, Thiruvananthapuram, Ernakulam, Alappuzha, Kozhikode, Thrissur                                    | Wayanad, Kasargod, Idukki, Palakkad, Malappuram, Pathanamthitta, Kollam                                  |
| <b>West Bengal</b> | <b>Best Performers</b>                                                                                             | <b>Worst Performers</b>                                                                                  |
| 2006               | Bardhaman, Medinipur, Howrah, Hooghly, Murshidabad, South 24 Parganas, Purulia, Birbhum, Malda                     | Jalpaiguri, Bankura, Cooch Behar, Dakshin Dinajpur, Uttar Dinajpur, Nadia, North 24 Parganas, Darjeeling |
| 2010               | Hooghly, Medinipur, Darjeeling, Howrah, South 24 Parganas, Dakshin Dinajpur, Bankura, Bardhaman, North 24 Parganas | Uttar Dinajpur, Jalpaiguri, Malda, Purulia, Birbhum, Cooch Behar, Murshidabad, Nadia                     |
| 2016               | Darjeeling, Medinipur, Bankura, South 24 Parganas, North 24 Parganas, Nadia, Howrah, Hooghly, Dakshin Dinajpur     | Uttar Dinajpur, Cooch Behar, Jalpaiguri, Malda, Purulia, Birbhum, Bardhaman, Murshidabad                 |

Source: Calculation of the author

the better-performing districts. Jalpaiguri has been the only district to consistently appear as a worst performer under LAI<sub>1</sub>. Uttar Dinajpur, Cooch Behar, Malda, and Purulia are also categorised as poor performers. The district-wise categorisation further reveals that Uttar Dinajpur

has recorded the lowest index value consistently since 2008.

District-wise Learning Achievement Index (LAI<sub>2</sub>) has been constructed by combining two learning indicators (LL<sub>5</sub> and LL<sub>6</sub>) for the years 2018, 2022, and 2024 (see Table 3).

**Table 3**  
**LAI<sub>2</sub>—District-level Analysis of Kerala and West Bengal**

| <b>Kerala</b>      | <b>2018</b> | <b>2022</b> | <b>2024</b> | <b>West Bengal</b> | <b>2018</b> | <b>2022</b> | <b>2024</b> |
|--------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| Alappuzha          | 0           | 0.61        | 0.56        | Bankura            | 0.425       | 0.485       | 0.555       |
| Ernakulam          | 0.44        | 0.47        | 0.57        | Bardhaman          | 0.535       | 0.465       | 0.55        |
| Idukki             | 0.295       | 0.33        | 0.11        | Birbhum            | 0.435       | 0.345       | 0.21        |
| Kannur             | 0.55        | 0.88        | 0.72        | Cooch Behar        | 0.46        | 0.345       | 0.535       |
| Kasargod           | 0.055       | 0.26        | 0.45        | Dakshin Dinajpur   | 0.385       | 0.585       | 0.475       |
| Kollam             | 0.59        | 0.25        | 0.37        | Darjeeling         | 0           | 0.39        | 0.325       |
| Kottayam           | 0.695       | 0.55        | 0.37        | Hooghly            | 0.74        | 0.58        | 0.565       |
| Kozhikode          | 0.285       | 0.86        | 0.47        | Howrah             | 0.755       | 0.585       | 0.58        |
| Malappuram         | 0.04        | 0.70        | 0.32        | Jalpaiguri         | 0.315       | 0.09        | 0.375       |
| Palakkad           | 0.34        | 0.04        | 0.41        | Malda              | 0.22        | 0.225       | 0.275       |
| Pathanamthitta     | 0.295       | 0.5         | 0.4         | Murshidabad        | 0.365       | 0.44        | 0.47        |
| Thiruvananthapuram | 0.155       | 0.87        | 0.8         | Nadia              | 0.51        | 0.495       | 0.65        |
| Thrissur           | 0.885       | 0.89        | 0.48        | North 24 Parganas  | 0.555       | 0.395       | 0.66        |
| Wayanad            | 0           | 0.15        | 0.2         | Paschim Medinipur  | 0.6         | 0.52        | 0.59        |
| Kerala             | 0.37        | 0.52        | 0.42        | Purba Medinipur    | 1           | 1           | 1           |
|                    |             |             |             | Purulia            | 0.48        | 0           | 0.4         |
|                    |             |             |             | South 24 Parganas  | 0.575       | 0.65        | 0.41        |
|                    |             |             |             | Uttar Dinajpur     | 0           | 0.08        | 0           |
|                    |             |             |             | West Bengal        | 0.515       | 0.465       | 0.49        |

Source: Calculation by the author using PCA

A comparative analysis of  $LAI_2$  reveals that Kerala’s average score increased from 0.37 in 2018 to 0.52 in 2022, largely driven by improvements

Nevertheless, both states continued to exhibit substantial inter-district disparities, particularly in arithmetic skills among children in Grades 3 to 5.

**Table 4**  
**District categorisation in terms of  $LAI_2$ —Kerala and West Bengal**

| <b>Kerala</b>      | <b>Best Performers</b>                          | <b>Worst Performers</b>             |
|--------------------|-------------------------------------------------|-------------------------------------|
| 2018               | Thrissur, Kottayam, Kannur                      | Malappuram, Kasargod                |
| 2022               | Thrissur, Kozhikode, Thiruvananthapuram, Kannur | Palakkad, Kollam, Wayanad           |
| 2024               | Thiruvananthapuram, Kannur, Ernakulam           | Idukki, Malappuram, Kottayam        |
| <b>West Bengal</b> | <b>Best Performers</b>                          | <b>Worst Performers</b>             |
| 2018               | Purba Medinipur, Howrah, Hooghly                | Uttar Dinajpur, Jalpaiguri          |
| 2022               | Purba Medinipur, South 24 Parganas, Hooghly     | Purulia, Uttar Dinajpur, Darjeeling |
| 2024               | Purba Medinipur, North 24 Parganas, Nadia       | Uttar Dinajpur, Darjeeling, Birbhum |

Source: Calculation by the author

in districts such as Thrissur, Kannur, and Thiruvananthapuram. However, this progress was not sustained; the average score declined to 0.42 in 2024, primarily due to a downturn in performance in several districts, including Idukki and Malappuram.

In contrast, West Bengal’s average  $LAI_2$  declined from 0.515 in 2018 to 0.465 in 2022, before rising to 0.49 in 2024, indicating relatively stable performance over the period. The state also displayed consistent top performers, with Purba Medinipur maintaining a perfect  $LAI_2$  score of 1.0 across all three years. Although Kerala initially held a lead, West Bengal eventually surpassed Kerala in average  $LAI_2$  by 2024.

**Learning Achievements:  
A Convergence Analysis**

Coefficient of Variation (CV) has been used to assess whether the gap between districts in terms of learning achievement is widening or narrowing over time. A declining CV indicates a reduction in inter-district disparities, suggesting movement toward greater equity in learning outcomes—an important goal for the educational development of any state.

In Kerala, disparities between districts initially increased, sharply from 2006 to 2010 in the case of  $LAI_1$ . The highest level of inequality was recorded in 2010, after which the CV declined, stabilising at 33 per cent in 2016. Over the decade (2006–16), the reduction in inequality was minimal—

only one percentage point—indicating that considerable inter-district disparities in learning achievement continue to persist in Kerala.

In West Bengal, the inter-district disparity has fluctuated since 2006 but remained roughly stable between 2013 and 2016, maintaining its initial level. This suggests that inequality among districts in West Bengal has not reduced over time; rather, it has persisted without notable improvement.

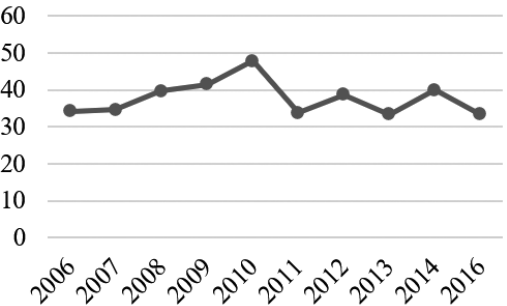


Fig. 9: Coefficients of Variation of  $LAI_1$  in Districts of Kerala

Source: Calculation by the author

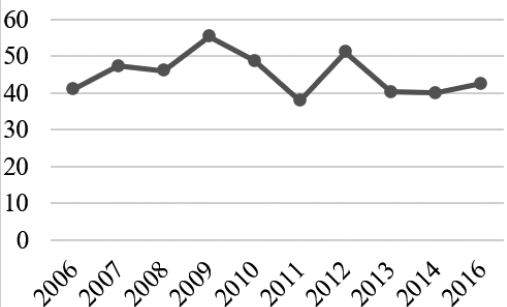


Fig. 10: Coefficients of Variation of  $LAI_1$  in Districts of West Bengal

Source: Calculation by the author

The extent of inter-district discrepancies is found to be higher in West Bengal than in Kerala. However, neither state has succeeded in reducing these disparities in learning achievement over the years.

To further examine recent patterns, the Coefficient of Variation (CV) has been recalculated to capture contrasting trends in inter-district disparities using  $LAI_2$  for the years 2018, 2022, and 2024, following the same methodology as earlier.

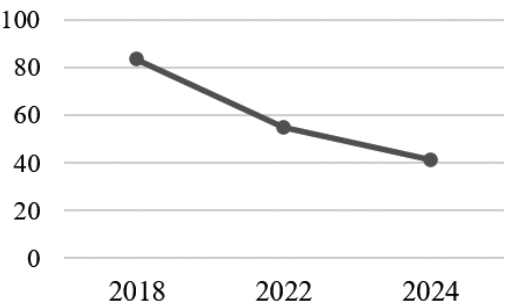


Fig. 11: Coefficients of Variation of  $LAI_2$  in Districts of Kerala

Source: Calculation by the author

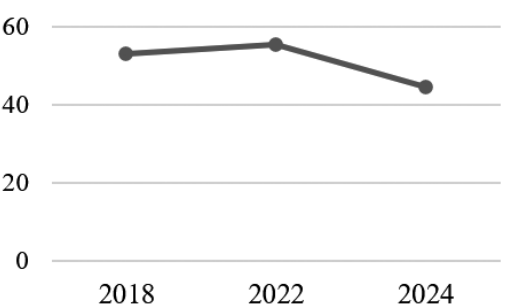


Fig. 12: Coefficients of Variation of  $LAI_2$  in Districts of West Bengal

Source: Calculation by the author

In Kerala, the CV has shown a consistent and substantial decline from 83.20 in 2018 to 41.09 in 2024, indicating a marked reduction in variability in  $LAI_2$  across districts. In contrast, West Bengal’s CV increased from 52.91 in 2018 to 55.22 in 2022 before declining to 44.31 by 2024. Although both states exhibited improvement by 2024, Kerala demonstrated a sharper and more sustained reduction in disparity, suggesting relatively more effective efforts toward achieving balanced educational development across its districts.

Section 3

*Relation between Learning Achievement Index and Private School Participation in Kerala and West Bengal*

The increasing popularity of the private schools reflects their perceived positive influence on primary education quality. Existing literature identifies several factors driving this rise. A strong aspiration for English-medium education remains one of the most significant reasons behind the growing demand for private schools across India. Moreover, private schools often emerge in areas where public schools struggle with inadequate performance, suggesting

that the demand for private schooling is largely driven by the shortcomings of the government system rather than rising household income levels.

Table 5 reveals that more than 50 per cent of children aged 6–14 in Kerala attend private schools, where as in West Bengal the proportion remains below 10 per cent. However, Kerala recorded its highest level of private school enrolment in 2013, after which the share has declined. This trend may indicate a shift in parental preference toward the government schools or alternative educational choices. Other contributing factors may include policy changes, improvements in public-school infrastructure, or broader socio-economic developments that influence schooling decisions.

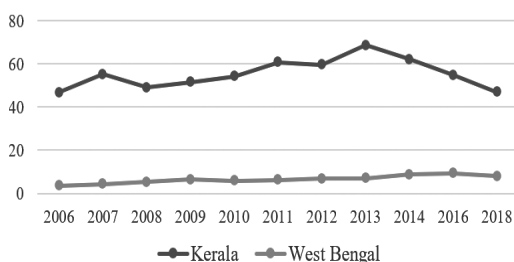
In West Bengal, the government schools continue to dominate both in terms of the total number of institutions and overall enrolment. The proportion of children enrolled in private schools increased from 3.5 per cent in 2006 to 9.3 per cent in 2016, followed by a slight decline in 2018. Consequently, as shown in Table 5, the share of children attending private schools remains significantly lower in West Bengal compared to Kerala, where the private institutions hold a much

**Table 5**  
**Percentage of Children Aged 6–14 Years Attending Private Institutions in Kerala and West Bengal – Trends Over Time**

|             | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2016 | 2018 |
|-------------|------|------|------|------|------|------|------|------|------|------|------|
| Kerala      | 46.8 | 55.2 | 49.1 | 51.5 | 54.2 | 60.8 | 59.6 | 68.6 | 62.2 | 54.8 | 46.9 |
| West Bengal | 3.5  | 4.3  | 5.3  | 6.5  | 5.9  | 6.3  | 6.9  | 7.0  | 8.8  | 9.3  | 7.9  |

Source: ASER reports, 2006 to 2018

stronger presence in both school count and enrolment. This contrast highlights the differing trajectories of school choice across the two states, shaped by variations in educational infrastructure, parental preferences and perceived quality of schooling.



*Fig. 9: Enrolment in Private Schools in Kerala and West Bengal - Trends over Time*  
Source: ASER reports

As per the 2011 Census, West Bengal's population is primarily composed of Hindus (70%), followed by Muslims (27%), and other religious groups (3%), including Christians, Buddhists, Jains, Sikhs, Animists, Zoroastrian, and Jews. The proportion of private Christian missionary schools in the state is relatively small compared to government schools. A substantial share of private school enrolment—particularly among economically weaker Christian families—comes from missionary institutions, which offer comparatively better-quality education at subsidised rates. These schools often provide additional support and incentives to children from disadvantaged backgrounds.

In contrast, Kerala's religious composition, according to the 2011 Census, reflects a more balanced distribution—54.73 per cent Hindus,

26.56 per cent Muslims, 18.38 per cent Christians, and 0.33 per cent belonging to other groups.

District-wise analysis of private school enrolment at the primary level in both states reveals distinct trends. In Kerala, enrolment in private schools increased steadily until 2012, after which it declined, coinciding with a notable rise in enrolment in madrasas and unrecognised institutions. By 2018, the distribution of enrolment stood at 53.4 per cent in private schools and 48 per cent in public schools, with the remaining share accounted for by the madrasas and unrecognised schools. Districts such as Pathanamthitta, Ernakulam, and Kottayam consistently recorded the highest proportions of primary school children enrolled in private institutions. Conversely, Kasargod, Wayanad, Thrissur, Malappuram, and Kozhikode were identified as districts with comparatively lower private school participation.

In West Bengal, districts such as Malda, Dakshin Dinajpur, Jalpaiguri, and Howrah demonstrated relatively high levels of private school enrolment at the primary level. In contrast, Darjeeling, Bardhaman, and Birbhum—followed by Purulia and Cooch Behar—registered some of the lowest private enrolment percentages. (DISE Reports)

In Table 5, the correlation between district-level LAI scores and enrolment shares in private and government schools, has been examined to assess whether school-type participation has any systematic association with learning outcomes.

**Table 6**  
**Correlation between LAI<sub>1</sub> and Enrolment Percentage in Government and Private School in Kerala and West Bengal—District-level Analysis**

| <b>Kerala</b> |     | <b>LAI<sub>1</sub><br/>2006</b> | <b>LAI<sub>1</sub><br/>2010</b> | <b>LAI<sub>1</sub><br/>2016</b> | <b>LAI<sub>2</sub><br/>2018</b> | <b>West<br/>Bengal</b> |     | <b>LAI<sub>1</sub><br/>2006</b> | <b>LAI<sub>1</sub><br/>2010</b> | <b>LAI<sub>1</sub><br/>2016</b> | <b>LAI<sub>2</sub><br/>2018</b> |
|---------------|-----|---------------------------------|---------------------------------|---------------------------------|---------------------------------|------------------------|-----|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| <b>2006</b>   | GVT | -0.008<br>(0.979)               |                                 |                                 |                                 | <b>2006</b>            | GVT | 0.243<br>(0.347)                |                                 |                                 |                                 |
|               | PVT | 0.008<br>(0.978)                |                                 |                                 |                                 |                        | PVT | -0.133<br>(0.611)               |                                 |                                 |                                 |
| <b>2010</b>   | GVT |                                 | 0.024<br>(0.936)                |                                 |                                 | <b>2010</b>            | GVT |                                 | 0.151<br>(0.564)                |                                 |                                 |
|               | PVT |                                 | -0.034<br>(0.909)               |                                 |                                 |                        | PVT |                                 | 0.088<br>(0.738)                |                                 |                                 |
| <b>2016</b>   | GVT |                                 |                                 | -0.639*<br>(0.014)              |                                 | <b>2016</b>            |     |                                 |                                 | 0.601*<br>(0.016)               |                                 |
|               | PVT |                                 |                                 | 0.482<br>(0.081)                |                                 |                        |     |                                 |                                 | 0.354<br>(0.163)                |                                 |
| <b>2018</b>   | GVT |                                 |                                 |                                 | -0.562<br>(0.057)               | <b>2018</b>            | GVT |                                 |                                 |                                 | 0.636**<br>(0.006)              |
|               | PVT |                                 |                                 |                                 | 0.501<br>(0.097)                |                        | PVT |                                 |                                 |                                 | 0.042<br>(0.868)                |

Source: ASER Reports and Elementary District Report Card, DISE, 2006 to 2018

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

The case of Kerala has been considered first. Over the time, private schools have consistently demonstrated superior learning outcomes compared to government schools. The analysis shows a positive correlation between private school enrolment and learning achievement, indicating that a higher share of children enrolled in private schools is associated with higher Learning Achievement Index (LAI<sub>1</sub>) scores. Although, this relationship was positive from 2006—onward, it did not achieve statistical significance in the early years; however, from 2013 to 2016, the correlation became statistically significant. In 2018,

a moderate positive, though statistically insignificant, association was found between LAI<sub>2</sub> and private school enrolment.

In contrast, government school enrolment in Kerala has shown a negative association with both LAI<sub>1</sub> and LAI<sub>2</sub> since 2006, becoming statistically significant from 2013 onward. Thus, in Kerala, learning outcomes tend to rise when children attend private schools and decline when they attend government schools.

West Bengal presents a distinctly different picture. Government schools in the state have consistently outperformed private schools in

learning achievement over the years. Government school enrolment has played a strong and positive role in sustaining learning standards from the outset, becoming statistically significant from 2013. In 2018, the correlation between government school enrolment and  $LAI_2$  reached a strong value (0.636), significant at the 0.01 level. Conversely, the impact of private school enrolment on both  $LAI_1$  and  $LAI_2$  has been positive but statistically insignificant since 2010. Despite lower private school participation, the steady improvement in learning achievement within government schools is noteworthy and encouraging.

## SUMMARY AND CONCLUSION

Learning achievement refers to the extent to which each child is able to meet the grade-level competencies of both the current grade and the grades previously completed. Despite considerable improvement in enrolment over the years, learning outcomes remain an area of persistent concern. In many states, including Kerala, the relationship between enrolment and learning outcomes has been notably stronger for private schools, where improved quality of education has helped narrow gaps in grade attainment and completion. However, affordability remains a major barrier for families across economic backgrounds.

In West Bengal, this positive association is more visible within government schools, which continue to dominate enrolment and

demonstrate steady improvements. As both states' more influential school sectors—private schools in Kerala and government schools in West Bengal—strengthen their learning outcomes, the overall reliance on private tuition appears to be declining.

Across indicators, the sharpest decline has been observed in numeracy skills among students in Grades 3–5 in both states, with a widening gap between Kerala and West Bengal over time. This aligns with the findings of Mukhopadhyay and Chatterjee (2014), who noted that learning outcomes in reading tend to be stronger than those in arithmetic.

District-level analysis for both  $LAI_1$  (2006–16) and  $LAI_2$  (2018–24) reveals substantial spatial disparities. Districts from Kerala such as Thiruvananthapuram and Kozhikode, have shown sustained improvement, whereas Idukki and Wayanad have lagged behind. In West Bengal, districts such as Medinipur, Nadia, and North 24 Parganas recorded significant progress, while Uttar Dinajpur, Jalpaiguri, Cooch Behar, Purulia, and Malda remained among the poorest performers.

The correlation analysis showed that Kerala has had a strong negative association between learning achievement and government school enrolment, whereas West Bengal exhibited a strong, significant positive association. Private schools in both states displayed varying degrees of positive correlation with learning outcomes, reflecting

contrasting enrolment patterns and schooling preferences.

Overall, the comparative analysis highlights that Kerala surpasses West Bengal in key areas such as student and teacher attendance, lower prevalence of multigrade teaching, and reduced inter-district disparities in learning outcomes. These findings align with Jalan and

Panda (2010), who observed that West Bengal historically exhibits lower learning levels and attendance rates in primary education. Taken together, the results underscore that learning outcomes—particularly reading and arithmetic skills among children in Grades 3–5—require continued and targeted improvement in both states.

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