



## Educational disparities in India: An analysis of parental education, home learning environment and school quality

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### Abstract

Educational disparities continue to affect student achievement in India despite various policy initiatives aimed at promoting educational equity. This study investigates the influence of family background and school conditions on students' educational outcomes, focusing on parental education, home learning environment, and school quality. A descriptive-analytical quantitative research design was adopted, and data were collected from 350 secondary and higher secondary students selected through stratified random sampling from government and private schools in urban and rural areas. Statistical analyses included descriptive statistics, cross-tabulations, Pearson's correlation, and multiple regression. The findings indicate significant differences in academic performance based on school type, residential location, parental education, and home learning conditions. School quality emerged as the strongest predictor of academic performance ( $\beta = 0.462$ ), followed by home learning environment ( $\beta = 0.331$ ) and parental education ( $\beta = 0.280$ ). The study concludes that both family and school factors jointly contribute to educational disparities and should be addressed to improve educational equity and student achievement.

**Keywords:** Educational disparities, academic performance, parental education, home learning environment, school quality

### Introduction

It is well known that education is essential for social and economic development. It can be used to address the disparities that exist throughout India and promote fair development in all communities, especially in a nation as diverse as India with a large population from a wide range of backgrounds. But despite all of the government's endeavours and programs, such the (RTE) ACT OF 2009, there are still a lot of educational gaps between various socioeconomic categories and across different regions. Additionally, there are discernible differences in learning outcomes, student retention, overall performance, and access to high-quality education because of a number of socioeconomic factors, parent education levels, home environments, and school quality, all of which contribute to these disparities, especially among underprivileged and marginalised children. Furthermore, a significant determinant of children's academic success is parent education.

For example, mothers with higher levels of formal education foster a love of learning in their children and may provide financial support when necessary. When it comes to getting help with schoolwork, having the chance to learn more, being motivated to perform well in school, and other advantages that come with having a parent with a college degree, children are far more likely to succeed if their parents participate in their education, create a positive learning environment at home, and support their success.

The educational environment in India is influenced by socioeconomic status, geographical disparities, and gender stereotypes. Thanks to the efforts of the government, non-governmental organisations (NGOs), and international organisations, India made significant strides in 2015 in

eradicating educational disparities. According to the UNESCO Institute for Statistics, India's net enrolment ratio (NER) in primary education was 92.8% in 2015, higher than in previous years (UNESCO, 2016). However, there are still gaps, especially in rural areas where poor infrastructure makes it more difficult for pupils to get an education. Over 25% of rural Indian children between the ages of 6 and 14 lacked the requisite reading skills in 2015, according to the ASER. (ASER Center, 2015). When it comes to secondary school, where dropout rates are especially high among underprivileged groups, the disparities are even more noticeable. A startling 24.9% of Scheduled Tribe students did not finish secondary school in 2014–2015, according to data gathered by the Ministry of Human Resources Development (2015). The unequal treatment of men and women continues to be a serious problem. According to UNESCO (2016), the gender disparity index in primary education was 0.94, showing a little edge for boys in certain areas despite attempts to reduce the gap. This discrepancy often continues into higher education levels, impeding women's opportunities to further their education or enter the workforce. The quality of the educational system is another significant barrier. A World Bank evaluation found that the high rate of teacher absenteeism in primary schools in 2015 had a detrimental impact on students' academic achievement, particularly in rural areas (World Bank, 2015). To address these disparities, government initiatives like the Right to Education Act have made an effort to increase access and quality. However, more significant efforts are required to rectify the existing disparities and ensure that all facets of Indian society have access to high-quality education.

## Objectives

- To determine how variations in family background and school conditions affect students; educational outcomes.
- To investigate how parental education, the home environment, and school quality all work together to either lessen or increase educational disparities.

## Research Methodology

### 1. Research Design

This study adopted a descriptive-analytical, quantitative research design grounded in the positivist paradigm. The descriptive component documented the socio-demographic and institutional characteristics of participants, while the analytical component examined relationships between variables using inferential statistics. A quantitative approach was chosen because the research questions were relational

and comparative in nature, requiring measurement, statistical testing, and generalisable findings.

### 2. Population and Sample

The target population comprised secondary (Classes 9–10) and higher secondary (Classes 11–12) students from government and private schools in both urban and rural areas of the study region. A sample of  $N = 350$  students was selected using stratified random sampling, with stratification based on school type (government/private) and area of residence (urban/rural). This ensured proportional representation across four strata (see Table 3.1). The sample size of 350 satisfies the recommended ratio of 10–20 observations per predictor variable for regression analysis (Hair *et al.*, 2010) and yields a margin of error of  $\pm 5.3\%$  at the 95% confidence level.

**Table 1:** Distribution of Samples by Stratum

Stratum	School Type	Area	Proportion in Population (%)	Sample Size (n)
1	Government	Urban	18	63
2	Government	Rural	38	133
3	Private	Urban	26	91
4	Private	Rural	18	63
Total			100	350

### 3. Instrument and Variables

Data were collected through a structured self-administered questionnaire developed after a systematic literature review and validated by an expert panel.

A pilot study with 30 students confirmed clarity and reliability; Cronbach's Alpha values for all scales exceeded the acceptable threshold of 0.70 (Nunnally, 1978), as shown in Table 3.2.

**Table 2:** Reliability Statistics for Measurement Scales

Scale	Number of Items	Cronbach's Alpha	Interpretation
Home Learning Environment	6	0.74	Acceptable
School Quality	5	0.78	Good
Perception-Based Statements	5	0.72	Acceptable
Parental Education & Involvement	3	0.71	Acceptable

The dependent variable, academic performance, was operationalised through students' most recent examination result (coded 1–4: below 40%, 40–60%, 60–80%, above 80%) and self-assessed overall performance (1 = poor to 4 = excellent). Three independent variables were measured: (1) Parental Education father's and mother's education level (0 = no formal education to 5 = postgraduate), combined into a composite score; (2) Home Learning Environment a composite of six indicators including study space, study materials, internet access, parental monitoring, digital device availability, and daily study time; and (3) School Quality a composite of five indicators covering facilities, teacher support, teacher–student interaction, extracurricular activities, and technology in teaching.

### 4. Data Analysis

All analyses were performed using SPSS Version 25.0 with a significance level of  $\alpha = 0.05$ . The analytical strategy proceeded in three stages:

- Descriptive statistics (frequencies, percentages, means, and standard deviations) characterised the sample and variable distributions.
- Cross-tabulation analysis examined academic performance differences across school type, area of residence, father's education level, and availability of study space.

- Pearson's correlation assessed the bivariate relationships between the three independent variables and academic performance. Multiple linear regression was then employed to estimate the unique predictive contribution of each variable:

Academic Performance =  $\beta_0 + \beta_1(\text{Parental Education}) + \beta_2(\text{Home Learning Environment}) + \beta_3(\text{School Quality}) + \varepsilon$   
 Regression assumptions (linearity, normality of residuals, homoscedasticity, independence) were verified; all Variance Inflation Factor (VIF) values were below 5, confirming the absence of multicollinearity.

### 5. Ethical Considerations

Institutional and school-level approvals were obtained prior to data collection. Participation was voluntary, anonymous, and confidential. Students and school authorities were informed of the study's purpose, and no identifying information was recorded. Data were used solely for academic purposes.

### Result

This chapter presents the findings of the study on educational disparities in India, with particular emphasis on the influence of parental education, home learning environment, and school quality on students' academic performance. The analysis was conducted using descriptive

statistics, cross-tabulation, correlation analysis, and multiple regression techniques. Descriptive statistics provide an overview of the key variables, while cross-tabulations highlight differences in academic outcomes across various demographic and educational categories. Pearson's correlation analysis examines the relationships among parental education, home learning environment, school

quality, and academic performance. Finally, regression analysis identifies the relative contribution of these factors in predicting students' academic achievement. The results provide empirical evidence regarding the role of family background and school conditions in shaping educational outcomes and contributing to educational disparities among students.

**Table 3:** Descriptive Statistics Key Variables

Variable	N	Min	Max	Mean	Median	Std. Dev.	Variance
Parental Education — Father	350	0	5	2.58	3	1.46	2.13
Parental Education — Mother	350	0	5	2.61	3	1.4	1.96
Parental Help in Studies	350	1	4	2.66	3	0.93	0.87
Study Material Availability	350	1	3	2.25	2	0.74	0.55
Internet Access	350	1	4	2.7	3	0.99	0.97
Basic School Facilities	350	1	4	2.37	2	1.03	1.06
Teacher Support	350	1	4	2.72	3	1.07	1.14
Teacher-Student Interaction	350	1	3	2	2	0.78	0.61
Academic Performance (Coded)	350	1	4	2.76	3	0.86	0.73
Composite: Parental Education	350	0	5	2.6	2.5	1.05	1.1
Composite: Home Learning Env	350	1.33	3.67	2.54	2.67	0.49	0.24
Composite: School Quality	350	1	3.67	2.36	2.33	0.64	0.41

According to the descriptive statistics, the mean values for the majority of the variables are moderate, which indicates that the levels of parental education, home learning environment, & school quality are all similar to average. Since the mean score for academic achievement is 2.76, it may be deduced that the majority of students fall somewhere between the average and excellent categories. While the standard deviations suggest that there is considerable variety in replies, they also

represent the fact that students have a wide range of experiences. Additionally, composite ratings indicate modest levels, especially with regard to the quality of the home learning environment or the school. The results of this investigation indicate that the circumstances are not particularly terrible; but, they are not exceptional either. Variances in academic achievement among students are the result of variations in various elements, which contribute to those variances.

**(A) School Type × Academic Performance**

**Table 4:** Cross-Tabulations Key Comparisons (N=350)

Category	Below 40%	40-60%	60-80%	Above 80%	Row Total
Government	22 (6.3%)	101 (28.9%)	66 (18.9%)	6 (1.7%)	195
Private	0 (0.0%)	14 (4.0%)	73 (20.9%)	68 (19.4%)	155

From the cross tabulation it's clear that there is a huge difference between the kids in public and private schools. A higher proportion of pupils are attending government schools in the lower grades of performance, with a higher proportion of pupils in the below 40% and 40% to 60% range. Students that attend private schools, on the other hand, demonstrate superior performance, with a significant number of them achieving scores that are higher than sixty

percent and, in particular, higher than eighty percent. Remarkably, no child at a private school is below the 40% mark. This is an indication of a significant difference in academic performance between the various school types, which is likely to be related to the differences in resources, quality of teaching and infrastructure. The findings will give insight in the influence of the institutional components on the academic achievement of the students.

**(B) Area of Residence × Academic Performance**

Category	Below 40%	40-60%	60-80%	Above 80%	Row Total
Urban	0 (0.0%)	35 (10.0%)	72 (20.6%)	46 (13.1%)	153
Rural	22 (6.3%)	80 (22.9%)	67 (19.1%)	28 (8.0%)	197

According to the findings, pupils in urban areas have a higher level of academic achievement compared to those in rural areas. A greater percentage of urban students have scores that fall between the ranges of 60–80% and over 80%, while none of them have scores that are lower than 40%. Pupils who live in rural areas, on the other hand, have a greater presence in lower performance groups, which includes all pupils who scored less than forty percent. It

would seem from this that the location of a school has a substantial impact in determining the results of education. There are a number of potential factors that might contribute to these inequalities, including access to resources, the quality of schools, as well as opportunities. The figures are clearly revealing that there is a clear academic different between rural and urban areas.

**(C) Father's Education Level × Academic Performance**

Category	Below 40%	40-60%	60-80%	Above 80%	Row Total
No formal education	7 (2.0%)	14 (4.0%)	9 (2.6%)	2 (0.6%)	32
Primary	2 (0.6%)	31 (8.9%)	20 (5.7%)	4 (1.1%)	57
Secondary	10 (2.9%)	28 (8.0%)	28 (8.0%)	14 (4.0%)	80
Higher Secondary	1 (0.3%)	25 (7.1%)	34 (9.7%)	14 (4.0%)	74
Graduate	2 (0.6%)	14 (4.0%)	32 (9.1%)	24 (6.9%)	72
Postgraduate and above	0 (0.0%)	3 (0.9%)	16 (4.6%)	16 (4.6%)	35

The correlation between father's education and the education of their children does seem to be increasing from the first to the last year. Students who have dads who have completed higher levels of education (graduate or postgraduate) have a greater chance of achieving higher results, especially in the category of scores that are higher than 80%. Contrary to this, children with fathers with less than a high school education were more likely to be grouped in the lower levels

of performance. This trend suggests that the level of education of the parents has a substantial effect in determining the academic results of their children. Parents with higher educational attainment positively affect pupils' performance as they are more likely to provide pupils with more direction, incentive and resources. The findings emphasize the importance of parental education to the degree to which academic discrepancies can be minimized.

**(D) Study Space at Home × Academic Performance**

Category	Below 40%	40-60%	60-80%	Above 80%	Row Total
Yes	3 (0.9%)	54 (15.4%)	88 (25.1%)	61 (17.4%)	206
No	19 (5.4%)	61 (17.4%)	51 (14.6%)	13 (3.7%)	144

Students who have access to a separate study place have been shown to have much higher academic performance than those who do not have such access. While a relatively small number of students are in the group with the lowest percentage, a greater proportion of students who have study space fall into the categories of 60–80% and over 80%. Students who do not have access to study space, on the other hand, have a greater degree of representation in lower

performance levels. It is clear from this that having a family environment that is favourable to learning is quite important. It is probable that having a separate study environment will increase focus and study habits, which will ultimately lead to improved academic achievements. The results highlight the significance of the physical circumstances of the house in terms of their influence on the performance of students.

**Table 5:** Correlation Matrix Key Variables (Pearson's R, N=350)

Variable	Parental Education	Home Learning Env.	School Quality	Academic Performance
Parental Education	1	-0.032	0.285	0.434
Home Learning Env	-0.032	1	0.011	0.18
School Quality	0.285	0.011	1	0.443
Academic Performance	0.434	0.18	0.443	1

The correlation study suggests that the level of parental education ( $r = 0.434$ ) or the quality of the school ( $r = 0.443$ ) have somewhat favourable correlations with academic achievement. This indicates that greater levels of these characteristics are connected with better results. The home learning environment has a lesser positive correlation ( $r = 0.18$ ), which suggests that the impact shown by this setting is smaller but still significant. In addition, there is a modest correlation between parental schooling and attending school

quality ( $r = 0.285$ ), which suggests that there is some relationship between the family background and the experiences that students have in school. In general, the findings demonstrate that academic success is influenced by a number of different variables, with the quality of the school and the level of education of the parents being the most significant contributors.

**a. Simple Linear Regression Results**

**Table 6:** Regression Analysis Predictors of Academic Performance (N=350)

Predictor Variable	Intercept ( $\beta_0$ )	Slope ( $\beta_1$ )	R <sup>2</sup>	p-value	Std Error	Significance
Parental Education (Composite)	1.836	0.355	0.188	0	0.039	***
Home Learning Environment (Composite)	1.952	0.318	0.032	0.0007	0.093	***
School Quality (Composite)	1.349	0.596	0.196	0	0.065	***

**b. Multiple Linear Regression Academic Performance =  $\beta_0 + \beta_1(\text{Parental Edu}) + \beta_2(\text{Home Env}) + \beta_3(\text{School Quality})$**

Variable	Coefficient ( $\beta$ )	Interpretation
Constant ( $\beta_0$ )	0.101	Baseline academic performance when all predictors = 0
Parental Education ( $\beta_1$ )	0.28	Change in performance per unit increase in parental education
Home Learning Environment ( $\beta_2$ )	0.331	Change in performance per unit increase in home learning quality
School Quality ( $\beta_3$ )	0.462	Change in performance per unit increase in school quality

Model Fit Summary		
R <sup>2</sup>	Adjusted R <sup>2</sup>	Sample Size (N)
0.335	0.329	350

**Note:** \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, ns = not significant. Academic Performance coded: 1=Below 40%, 2=40-60%, 3=60-80%, 4=Above 80%.

The findings of the regression analysis indicate that all three predictors whether it be parental education, the learning environment at home, or the quality of the school have a substantial influence on academic success. Under the assumption of simple regression, the quality of the school explains the greatest amount of variance ( $R^2 = 0.196$ ), followed by the education level of the parents ( $R^2 = 0.188$ ), and the environment of the house has a lower influence ( $R^2 = 0.032$ ). According to the multiple regression model, the factor that has the greatest impact is the quality of the school ( $\beta = 0.462$ ), followed by the environment of the home ( $\beta = 0.331$ ) and the education level of the parents ( $\beta = 0.28$ ). Considering that the total model accounts for 33.5% of the variation, it can be concluded that the combination of these characteristics is a substantial predictor of academic achievement.

### Conclusion

The correlation and regression analyses further confirmed that parental education, home learning environment, and school quality are all significant predictors of academic performance. Among these factors, school quality emerged as the strongest determinant, followed by home learning environment and parental education. The regression model explained a substantial proportion of variation in academic performance, highlighting the combined influence of family and institutional factors on student achievement. The findings suggest that educational disparities cannot be addressed through school-based interventions alone. Efforts to improve educational equity must simultaneously focus on strengthening school infrastructure, enhancing teacher support and instructional quality, expanding learning resources, and encouraging greater parental involvement in children's education. Special attention should be directed toward students from disadvantaged family backgrounds and rural communities where educational opportunities remain comparatively limited. Overall, the study concludes that reducing educational disparities in India requires a holistic approach that integrates improvements in family support systems and school quality. Such measures can contribute significantly to creating more equitable learning opportunities and improving academic outcomes for all students.

### References

1. Castro M, Expósito-Casas E, López-Martín E, Lizasoain L, Navarro-Asencio E, Gaviria JL. Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review*,2015;14:33–46.
2. Catsambis S. Expanding knowledge of parental involvement in children's secondary education: connections with high school seniors' academic success. *Social Psychology of Education*,2001;5:149–177.
3. Cokley K. An investigation of academic self-concept and its relationship to Academic achievement in

- African American college students. *Journal of Black Psychology*,2000;26:148–164.
4. Cooper CE, Crosnoe R, Suizzo MA, Pituch KA. Poverty, race, and parental involvement during the transition to elementary school. *Journal of Family Issues*,2010;31:859–883.
5. Croninger RG, Lee VE. Social capital and dropping out of high school: Benefits to at-risk student of teachers' support and guidance. *Teachers College Record*,2001;103:548–581.
6. Davis-Kean PE. The influence of parent education and family income on child achievement: the indirect role of parental expectations and the home environment. *Journal of Family Psychology*,2005;19(2):294–304.
7. DeDonno MA, Fagan JF. The influence of family attributes on college students' academic self-concept. *North American Journal of Psychology*,2013;15(1):49–62.
8. Dehyadegary E, Yaacob SN, Juhari RB, Talib MA. Relationship between Parenting Style and Academic Achievement among Iranian adolescents in Sirjan. *Asian Social Science*,2012;8(1):156–160.
9. Desforges C, Abouchaar A. The impact of parental involvement, parental support and family education on pupil achievement and adjustment: A literature review. *Research Report RR443*. London: Department for Education and Skills, 2003.
10. Domina T. Leveling the home advantage: Assessing the effectiveness of parental involvement in elementary school. *Sociology of Education*,2005;78:233–249.
11. Dumont H, Trautwein U, Lüdtke O, Neumann M, Niggli A, Schnyder I. Does parental homework involvement mediate the relationship between family background and educational outcomes? *Contemporary Educational Psychology*,2012;37(1):55–69.
12. Janah A. Education contradiction between city and village. *Indonesian Journal of Education (INJOE)*,2022;2(2):95–103. <https://doi.org/10.54443/injoe.v2i2.15>
13. Kaiser N, Barstow CK. Rural transportation infrastructure in low- and middle-income countries: A review of impacts, implications, and interventions. *Sustainability*,2022;14(4):2149. <https://doi.org/10.3390/su14042149>
14. Malo S. Investigating the role of home learning environment in shaping children's literacy development: A comparative analysis of two families in rural India, 2024.
15. Kretchmar-Hendricks M. Parenting. In *Encyclopaedia Britannica*, 2023. <https://www.britannica.com/topic/parenting>