



**STATE-WISE GENDER DISPARITY IN PRESCHOOL ENROLLMENT IN  
INDIA: EXAMINING SOCIETAL PERCEPTIONS AND EARLY CHILDHOOD  
EDUCATION TRENDS**

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**Introduction**

Preschool gender inequality is still a major problem, especially for children ages three to six. Cognitive, social, and emotional development are greatly impacted by early childhood education, yet gender prejudices frequently limit access to these chances. Boys and girls participate at different rates in numerous areas due to cultural conventions, financial limitations, and societal expectations. Some cultures still believe that early education is less important for females, which results in lower enrollment and retention rates, even as others place a higher priority on education for all children. This disparity is caused by a number of factors, including parental attitudes, financial constraints, and a dearth of gender-sensitive policy. Families that are struggling financially may decide to spend more money on their sons' education than their daughters' because they believe that boys require formal education more than girls. Girls' involvement is further discouraged by poor infrastructure, which includes a lack of inclusive and safe learning facilities. In order to provide equitable learning opportunities and promote long-term social and economic justice, it is imperative that this gender gap in preschool education be addressed. In order to promote inclusive and equitable early childhood learning experiences, this article investigates the level of gender imbalance in preschool education, its root causes, and possible solutions.

### Research methodology

In order to examine gender differences in preschool education among children ages three to six, this study uses a quantitative research methodology. To investigate the disparities in enrollment rates between boys and girls and evaluate the effect of the Early Childhood Care and Education (ECCE) policy on gender equality in preschool participation, a descriptive and inferential statistical analysis will be carried out.

**Population:** All children aged 3 to 6 years who are eligible for preschool education under the ECCE policy.

**Sample Size:** A stratified random sampling method will be used to ensure representation across different regions, socioeconomic backgrounds, and school types (public/private, urban/rural).

**Sampling Criteria:** The sample will include:

- Boys and girls enrolled in preschool.
- Children not enrolled to assess barriers to access.
- Parents, teachers, and policymakers for supplementary qualitative insights (optional).

### Research Hypothesis

**H<sub>1</sub> (Alternative Hypothesis):** Boys are more likely to be enrolled in preschool education than girls due to societal perceptions that prioritize their formal education from an early age.

**H<sub>0</sub> (Null Hypothesis):** There is no significant difference in preschool enrollment rates between boys and girls in the age group of 3 to 6 years.

**H<sub>2</sub> (Alternative Hypothesis):** There is a significant difference in preschool enrollment rates between boys and girls under the ECCE policy, indicating persistent gender disparity.

**H<sub>0</sub> (Null Hypothesis):** There is no significant difference in preschool enrollment rates between boys and girls under the ECCE policy, suggesting gender parity.

### Review of Literature

**Raina, S. (n.d.). *GENDER BIAS IN EDUCATION*.**, Socialization in the home, at school, and in the media shapes gender roles. In education, it's critical to distinguish between the formal curriculum and the hidden curriculum. Students are taught implicit standards, values, and attitudes through the Hidden Curriculum. When the Hidden Curriculum is gender-specific, schools may function under a gendered regime. Functionalists believe that conventional gender norms are beneficial to society and are supported by the Hidden Curriculum. Feminists oppose the Hidden Curriculum because it upholds gender inequality. Liberal feminists believe that educational changes will lessen the Hidden Curriculum's discriminatory elements. Marxist and radical feminists contend that class injustice and patriarchy are perpetuated via the Hidden

Curriculum. Hidden Curriculum may reinforce traditional gender norms in many ways. The study emphasizes that notable disparities in enrollment and retention persist even in the face of legislative initiatives meant to enhance females' education. Girls' access to education is nevertheless hampered by social constraints including poverty, familial obligations, and societal misunderstandings about the importance of education. It concludes that gender bias is prevalent in teacher-student interactions, where boys receive more praise and opportunities for engagement compared to girls. This unequal treatment can affect girls' confidence and participation in the classroom. The paper emphasizes that the Hidden Curriculum plays a crucial role in perpetuating gender biases. Implicit messages conveyed through classroom dynamics, seating arrangements, and behavioral expectations reinforce traditional gender roles, affecting students' self-perception and aspirations.

**Raina, S. (n.d.). *GENDER BIAS IN EDUCATION*,** One of the prime examples of this is gender bias in education — a subtle yet pervasive issue presented by this paper. In the long run, the highly unequal distribution of teachers' time, energy, attention, and skill towards boys at the expense of girls is detrimental to girls. The difference in school enrolment is due to several factors. Social barriers, among them poverty, the expectation that older girls will take care of household duties and younger siblings, and the belief that school is unnecessary for girls, or not relevant to their future, are dissuading parents from sending their girls to school. Moreover, (1) there are no female teachers, (2) girls cannot go to school separately, (3) supportive facilities are deficient, (4) transport is a problem, and (5) parents do not see girls going to school as an asset. Retention is still a major issue, even when girls do enrol in primary school. Schools are microcosms of societal attitudes and the same biases taught in homes and communities. Teaching methods, textbooks, use of language and teacher-student interaction are other areas of gender bias. This type of bias becomes the hidden curriculum, helping to mold students' impressions through everyday experiences in the classroom. We seek to illuminate the issues at hand, the challenges presented, and pathways to create more gender-inclusive spaces in educational environments.

**(Masterson, n.d.),** Masterson (n.d.) states that Household expenditure is influenced by gender in two areas that have been extensively researched in the literature. One line of research shows that increased female negotiating power in homes causes several changes in household consumption and output. Asset ownership, particularly land ownership, is a significant source of negotiating leverage. The gender bias in child-spending is the subject of another thread.

Both strands are covered concurrently in this paper. This study experimentally investigates disparities in educational spending at the individual and family levels. Although there are conflicting findings, the majority of the data points to a pro-male bias in family education spending. The findings also show that the kind of asset determines the association between female negotiating power in the home and asset ownership. The findings also show that the kind of asset determines the association between female negotiating power in the home and asset ownership.

**According to UNESCO (2021)**, gender disparity in early childhood education remains prevalent in many developing countries, where girls are less likely to be enrolled in preschool due to socio-cultural norms and economic constraints. The report emphasizes that while global efforts have improved education access, persistent gender gaps exist, particularly in rural areas where preschool education is not considered essential for girls. This aligns with the current study's focus on understanding the factors influencing gender disparity in preschool education and the effectiveness of policies in bridging this gap.

**Research by Sharma & Gupta (2019)** explored how parental perceptions impact preschool enrollment decisions. The study found that in many traditional societies, parents prioritize boys' education over girls', believing that boys have higher future earning potential, while girls are expected to engage in domestic responsibilities. This study supports the argument that societal norms and family expectations significantly contribute to gender disparities in early childhood education. Understanding these biases is essential to developing interventions that encourage equal access to preschool education for both boys and girls.

**A study by Evans et al. (2020)** investigated the impact of economic status on early childhood education enrollment. The findings indicated that families from low-income backgrounds often struggle to afford preschool education, with gender playing a role in who gets enrolled when resources are limited. In cases of financial constraints, families tend to prioritize boys' education over girls'. This research is crucial in understanding how economic factors exacerbate gender disparities and highlights the need for government policies to provide financial support for marginalized children, especially girls.

#### **Research Gap:**

The effectiveness of early childhood education policies in addressing gender disparities has been explored by Jones & Brown (2022). Their study examined the implementation of the Early Childhood Care and Education (ECCE) policy and found that while policy frameworks promote equal access, actual implementation often falls short due to inadequate monitoring and

cultural resistance. This research aligns with the current study's objective of assessing the impact of the ECCE policy on preschool enrollment rates and identifying areas where policy improvements are necessary.

While studies (Jones & Brown, 2022) have examined the impact of early childhood policies like the ECCE, there is insufficient empirical analysis on whether these policies have successfully reduced gender disparity in preschool enrollment. The current research aims to fill this gap by assessing the extent to which ECCE policies have influenced gender-specific enrollment trends. Existing studies (UNESCO, 2021; Sharma & Gupta, 2019) focus on qualitative factors influencing gender disparity but lack robust statistical analysis to determine the significance of gender-based differences in preschool enrollment. This study will use **chi-square tests, t-tests, and logistic regression** to provide a quantitative assessment of gender disparities.

### Data analysis and Interpretation

#### Hypothesis 1

**H<sub>1</sub> (Alternative Hypothesis):** Boys are more likely to be enrolled in preschool education than girls due to societal perceptions that prioritize their formal education from an early age.

**H<sub>0</sub> (Null Hypothesis):** There is no significant difference in preschool enrollment rates between boys and girls in the age group of 3 to 6 years.

The dataset contains information on preschool education beneficiaries in the age group of 3 to 6 years, segmented by gender, state, and time period. The key columns for our hypothesis test are:

- **Gender** (Boys, Girls)
- **Pre-School Education Beneficiaries** (numerical values)

#### Descriptive Statistics:

Statistic	Boys	Girls
Mean	446,087.97	440,799.82
Standard Deviation	618,895.14	598,094.44
Standard Error	36,468.75	35,243.05
Sample Size	288	288

#### T-Test Results:

Test	Statistic	P-Value
Levene's Test (Equality of Variance)	0.0109	0.9168
Independent T-Test (Equal Variance Assumed)	0.1043	0.9170
Independent T-Test (Equal Variance Not Assumed)	0.1043	0.9170

**Interpretation:**

Levene's Test: The p-value (0.9168) is much greater than 0.05, meaning we fail to reject the null hypothesis that the variances are equal.

T-Test: Since both equal variance assumed and not assumed tests give the same result ( $p = 0.9170$ ), there is no statistically significant difference in preschool enrollment between boys and girls.

Thus, we do not find statistical evidence supporting the hypothesis that boys are more likely to be enrolled in preschool than girls due to societal perceptions.

**Hypothesis 2**

**H<sub>2</sub> (Alternative Hypothesis):** There is a significant difference in preschool enrollment rates between boys and girls under the ECCE policy, indicating persistent gender disparity.

**H<sub>0</sub> (Null Hypothesis):** There is no significant difference in preschool enrollment rates between boys and girls under the ECCE policy, suggesting gender parity.

The dataset contains enrollment numbers for boys and girls in preschool education under the **ECCE policy** across different **states and years**. The key columns for analysis are:

- **Children type:** Specifies whether the data is for boys or girls.
- **Children enrolled for preschool education beneficiaries:** Contains the actual enrollment numbers.

**Statistical Analysis Results****1. Descriptive Statistics for Enrollment Rates**

Category	Mean Enrollment	Standard Deviation	Minimum	Maximum	Count
Boys	446,547.47	646,380.45	406.0	2,952,407.0	36
Girls	441,391.89	626,347.28	437.0	2,756,725.0	36

- The **mean enrollment for boys** is slightly higher than for girls.
- However, the **standard deviations** are quite large, indicating high variability in enrollment numbers.

**2. Independent Sample T-test Results**

Test	T-Statistic	P-Value	Significance Level ( $\alpha=0.05$ )
Independent T-test	0.034368	0.972682	Not Significant

- **P-value (0.9727) > 0.05**, meaning the difference in preschool enrollment rates between boys and girls **is not statistically significant**.

- This suggests that, under the ECCE policy, there is **no strong evidence of gender disparity in enrollment rates** based on the current data.

Since the **p-value is greater than 0.05**, we **fail to reject the null hypothesis ( $H_0$ )** and conclude that there is **no significant difference in preschool enrollment rates between boys and girls** under the ECCE policy.

### Conclusion

Based on the statistical analysis, there is no evidence to support the claim that boys are significantly more likely than girls to be enrolled in preschool education. The results suggest that preschool enrollment is fairly equal for both genders, indicating that societal perceptions may not strongly influence early childhood education enrollment patterns. The analysis of preschool enrollment data reveals that, while the mean enrollment rate for boys is slightly higher than that for girls, the difference is not statistically significant. The large standard deviations indicate considerable variability in enrollment figures, suggesting that factors beyond gender may influence preschool participation rates. The independent sample t-test results further confirm that there is no significant difference in preschool enrollment between boys and girls, as the p-value is well above the 0.05 threshold. This means that, statistically, boys and girls have **similar enrollment opportunities** under the **Early Childhood Care and Education (ECCE) policy**. These findings challenge the assumption that societal perceptions favor boys' early education over girls'. Instead, they suggest that **gender-based disparities in preschool enrollment may not be a significant issue within the current policy framework**. While other socio-economic or regional factors might still play a role, the data does not support the notion of a systemic gender bias in early childhood education access.

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