*South India Journal of Social Sciences, September'24, Vol. 22 - No. 3*
ISSN : 0972-8945 (Print) | 3048-6165 (Online)

# *PREDICTORS OF PRIVATE EXPENDITURE ON SCHOOL EDUCATION IN TELANGANA*

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## Introduction

Despite the provision for free elementary education in India, families still bear the cost of education for various reasons. With the Indian government introducing the National Education Policy 2020 aligned with Sustainable Development Goal 4 of the United Nations - aiming to achieve inclusive and high-quality education for all by 2030 - it is crucial to comprehend the disparities in private educational spending among different groups in a newly established state such as Telangana.

While Public expenditure on education is crucial for providing universal access and quality education, private spending plays a significant role in supplementing the resources and ensuring an enhanced learning experience for students. Private expenditure on elementary education in Telangana, like in many other parts of the world, can be influenced by various factors. Understanding the predictors of private expenditure in elementary education can provide valuable insights for policymakers and education stakeholders in formulating strategies to promote equitable access to quality education. In this context, this article aims to explore the predictors associated with the private expenditure on school education for children aged 6 to 14 in Telangana.

Private expenditure on elementary education refers to the funds spent by individuals or households on educational expenses for their children (Tilak, 2002). Particularly in this article, the sum of school and tuition fee paid in the last yearis considered the private expenditure. Present study is constrained to ignore the opportunity cost of education.

## Literature :

Education is widely recognized as a cornerstone of development, pivotal for individual advancement and societal progress. Understanding the factors influencing household expenditure on education is essential for policymakers and researchers to design effective interventions and promote equitable access to education. This literature review synthesizes findings from various studies across different countries and contexts to explore the determinants of private expenditure on education.

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Several studies have delved into the socioeconomic factors shaping household expenditure on education. Higher household income levels have consistently been associated with increased educational spending, as observed in research conducted in Turkey (Acar et al., 2016; Bayar & Ilhan, 2016), Cyprus (Andreou, 2012), Sudan (Ebaidalla, 2018), and India (Lakshmanasamy, 2021). Additionally, the education level of the household head emerges as a significant determinant, indicating a positive correlation between parental education and education spending (Andreou, 2012; Maritim, 2017; Tilak, 2002).

Household demographics also play a crucial role in shaping education expenditure patterns. Studies have identified household size, the number of children, and the gender composition of the household as key determinants. For instance, larger households and those with a greater number of school-going children tend to allocate more resources to education (Donkoh & Amikuzuno, 2011; Maritim, 2017). Gender disparities in education spending have also been highlighted, with some studies indicating a preference for investing in male children over females (Maritim, 2017; Mukherjee & Sengupta, 2021; Tilak, 2002).

Regional disparities emerge as significant factors influencing household education expenditure. Research conducted in Cyprus (Andreou, 2012) and India (Lakshmanasamy, 2021) indicates variations in spending patterns across different geographic regions. Urban households often exhibit higher education spending compared to their rural counterparts, reflecting differences in income levels, access to educational resources, and cost of living (Ebaidalla, 2018).

Government policies and interventions also shape household education expenditure patterns. Studies have explored the relationship between government expenditure on education and household spending, highlighting the complementary nature of these investments (Tilak, 2002). Policy implications include the need for targeted interventions to support vulnerable groups, gender-neutral education spending policies, and increased government investment in education to alleviate financial burdens on households (Donkoh & Amikuzuno, 2011; Mukherjee & Sengupta, 2021).Despite this, government expenditure on education as a percentage of both SGDP and total spending has been declining in both current and real terms. Furthermore, Telangana's per capita education spending is lower than that of Andhra Pradesh. The growth in per capita spending on education has remained stagnant (Chandan Kotu, 2022).

Understanding private education spending patterns and determinants is crucial for addressing equity and efficiency in education financing. Analyzing the impact of regional, demographic, and socioeconomic factors on private educational expenditures can inform more effective public policies aimed at ensuring equitable access to quality education for

all. Thus, this article aims to assess the determinants of private expenditure on elementary school education in the state of Telangana, contributing to the broader discourse on education financing and equity.

**Methodology :**

**Data source and sampling method:**

The research utilizes unit-level data from the National Sample Survey on "Household social consumption: Education," which was carried out by the National Statistical Office during its 75th round spanning July 2017 to June 2018. The NSS data is representative at the state level, and for this study, data specific to Telangana state has been employed. The NSS 75th round data was obtained using a stratified multi-stage sampling design to ensure comprehensive and representative data collection(National Statistical Office, 2019).In this design, Census villages in rural areas and Urban Frame Survey (UFS) blocks in urban areas were used as the first stage units (FSU). Households in both rural and urban areas made up the final stage units (USU), which provided comprehensive data at the local level. For larger FSUs, an intermediate stage was introduced, selecting two hamlet-groups (hgs) or sub-blocks (sbs) from each rural or urban FSU to manage the sample size effectively. Stratification was done at the district level, creating two primary strata within each district: one for all rural areas and one for all urban areas. In urban settings where towns have populations of one million or more, as per the Census 2011, each of these towns constituted a distinct stratum. The other urban areas within the district were grouped together into a separate stratum. This method ensured that both rural and urban areas, including large metropolitan towns, were adequately represented in the survey.

**Analytical Framework:**

Household expenditure functions are among the most important analytical methods employed in this study. Individual household expenditures and their determinants are linked by expenditure functions, which are regression equations. The expenditure functions permit study of household expenditures in a framework suitable for econometric estimate from the standpoint of empirical inquiry and policy usage. The models created by Becker (1967) and Behrman, Pollak, and Taubman (1982) serve as the foundation for the current study, as well as most of the literature on household decision-making behaviour. In the individual model, decisions about education investment are primarily based on efficiency considerations; however, in the family model, there may be additional considerations, such as equity among the family's children. Families, not individuals, make decisions on education investment in general, and especially at lower levels of schooling. As a result, in the current setting, the family/household spending function is judged suitable (Tilak, 2002).

In a cross-section study, estimating the expenditure function entails observing variables

at a certain point in time and assuming that a change in one of these factors/independent variables, such as household income, is responsible for changes in educational expenditures. A functional connection that connects expenditures to their determinants can be described as the conceptual model underpinning a typical earnings function:

$$TEXED=f(X)$$

Where TEXED is total educational expenditure

X is a set of predictors.

The multiple regression equation that we used in this study is given below:

$$ln(tot\_exp_{i)=}\ \beta_1+\ \beta_2 ln(hh\_cons\_exp_i)+\ \beta_3\ ln\ (age_i)+\ \beta_4 Govt_i\ +\ \beta_5\ ST_i+\ \beta_6 SC_i+\ \beta_7 OBC_i+ \beta_8 Female_i+\ \beta_9 Rural_i+\ \beta_{10} Minority_i+\ \beta_{11} Govt\_ST_i+\ \beta_{12} Govt\_SC_i+\ \beta_{13} Pvt\_Coaching_i\ +\ u_{\ i}$$

**Dependent variable:**

tot_exp is total educational expenditure for a year

**Independent variables:**

hh_cons_exp: household's usual consumer expenditure

age: age of the child

Govt: 1 if the type of the institution is government and 0 otherwise

ST: 1 if the child belongs to scheduled tribe and 0 otherwise

SC: 1 if the child belongs to scheduled caste and 0 otherwise

OBC: 1 if the child belongs to other backward class and 0 otherwise

Female: 1 if the child is a female and 0 otherwise

Rural: 1 if the child is resident of household in rural sector and 0 otherwise

Minority: 1 if the child belongs to non-Hindu family and 0 Otherwise

Govt_ST: 1 if the child belong to ST community who attends a government institution and 0 otherwise

Govt_SC: 1 if the child belong to SC community who attends a government institution and 0 otherwise

Pvt_Coaching: 1 if the child is taking a private coaching and 0 otherwise

Null Hypothesis: All regression coefficients are zero meaning that the changes in predictors has no effect on predict.

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = \beta_{10} = \beta_{11} = \beta_{12} == \beta_{13}\ 0$$

Alternative Hypothesis: Not all regression coefficients are zero meaning that the changes in at least one predictor has a non-zero effect on predict

$H_1$: $\exists i, \beta_i \neq 0$

**EMPIRICAL ANALYSIS AND RESULTS:**

Table 1 below contains the descriptive statistics of total expenditure on education for children aged 6 to 14 in Telangana. The sample has 1962 observations, one for each student currently enrolled in school. After applying weights, the number of students are more than 55 lakhs.

From the Table 1, we find that the mean values total expenditure on education for socially backward classes such as SC, ST and OBC is lower than the rest of the group. Average spending on a female child is less than male. Similarly for children in rural areas average spending is less than urban counter parts. The average spending on children attending in government institutions is much less than private aided and unaided institutions. Average spending on children belonging to Hindu families is less than Minority group families. Though there is a difference in average spending among different groups, using descriptive statistics cannot make any inferences. For making the inference about the population, we will run a multiple regression model.

**Table 1: Average values of total expenditure on education for age group of 6 to 14 in Telangana**

| | Frequency | Mean (Total Expenditure on Education) |
|---|---|---|
| **Social group** | | |
| Scheduled tribe | 438842 | 4864 |
| Scheduled caste | 838176 | 5914 |
| Other backward class | 3392193 | 11560 |
| Others | 854754 | 20691 |
| **Gender** | | |
| Male | 3077565 | 12071 |
| Female | 2446400 | 10972 |
| **Sector** | | |
| Rural | 3074756 | 5709 |
| Urban | 2449209 | 18960 |
| **Type of Institution** | | |
| Government | 2378285 | 1456 |
| Private aided | 212409 | 23315 |
| Private unaided | 2933271 | 18946 |

| **Religion** | | |
|---|---|---|
| Hindu | 4780087 | 11003 |
| Minority | 743878 | 15315 |

Source: Compiled from unit level data on education by NSSO, 75th round

Table 2 below contains the estimates of multiple linear regression model. Regression model showed overall significance and explains 83% of changes in total private expenditure on education.

Household's usual consumer expenditure, child's age, government dummy, ST dummy, SC dummy, Govt_ST dummy, Govt_SC dummy and Private coaching dummy were found to be significantly associated with total private expenditure on education. OBC dummy, Female dummy, Rural dummy and Minority dummy were found to be insignificant in predicting the private expenditure on education.

**Table 2: Estimates of multiple linear regression model**

| Linear regression | | | | Number of obs | = | 1962 |
|---|---|---|---|---|---|---|
| | | | | F( 12, 1949) | = | 269.360 |
| | | | | Prob > F | = | **0.000** |
| | | | | R-squared | = | **0.826** |
| | | | | Root MSE | = | 0.659 |
| **ln_tot_exp** | **Coef.** | **Robust Std. Err.** | **t** | **P>t** | | **Beta** |
| ln_hh_cons_exp | **0.299*** | 0.051 | 5.89 | 0.000 | | 0.111 |
| ln_age | **0.903*** | 0.097 | 9.27 | 0.000 | | 0.156 |
| Govt | **-2.769*** | 0.064 | -43.15 | 0.000 | | -0.870 |
| ST | **-0.444*** | 0.130 | -3.40 | 0.001 | | -0.076 |
| SC | **-0.487*** | 0.119 | -4.09 | 0.000 | | -0.111 |
| OBC | -0.090 | 0.065 | -1.38 | 0.167 | | -0.028 |
| Female | 0.000 | 0.051 | -0.01 | 0.994 | | 0.000 |
| Rural | -0.019 | 0.062 | -0.31 | 0.757 | | -0.006 |
| Minority | 0.080 | 0.068 | 1.17 | 0.243 | | 0.017 |
| Govt_ST | **0.572*** | 0.186 | 3.07 | 0.002 | | 0.082 |
| Govt_SC | **0.410**** | 0.173 | 2.37 | 0.018 | | 0.074 |
| Pvt_Coaching | **0.255*** | 0.084 | 3.02 | 0.003 | | 0.027 |
| _cons | 4.944* | 0.569 | 8.68 | 0.000 | | . |

Source: Compiled from unit level data on education by NSSO, 75th round

Note: * significant at 1% level and ** significant at 5% level

Household's monthly consumer expenditure was found to be positively associated to private spending on education at 1% significance level. This indicates that the poorer households tend to spend less in comparison with rich. This result is in line with what was found at all India level.

Age was found to be positively related to private expenditure on education as one would expect at 1% significance level. As the child advances in his studies the burden of educational expenditure increases on the household. This result is in line with what was found at all India level.

Scheduled tribes and scheduled castes were negatively associated with private expenditure on education at 1% significance level. The families belonging to these social classes are spending significantly less in comparison with the rest of the families.

Though OBC, Female, Rural had shown a low average in descriptive statistics, did not show any significance in the model. Minority had a higher average than the Hindu but did not show any significance in the model. Rural dummy showed a significance when the Govt dummy was not included in the model suggesting that the effect of rural-urban differences are captured by Govt dummy and by that reducing the significance of Rural dummy.

The interaction terms Govt_ST dummy and Govt_SC dummy found to be positively associated with private expenditure indicating that ST and SC families are spending more in government institutions in comparison to the others group given that they attend government institutions.

Private coaching was found to be positively related with private expenditure on education at 1% significance level. This result is in line with what was found at all India level.

In summary, private expenditure on school education is positively correlated with household consumer expenditure and the age of the child, while Scheduled Tribes (ST) and Scheduled Castes (SC) show negative correlations. Private coaching also positively affects private educational expenditure. However, factors like Other Backward Class (OBC), gender, rural residence, and minority status do not significantly impact spending. Unlike national trends, Telangana does not exhibit significant gender bias in educational spending.

**Conclusion :**

In conclusion, this study sheds light on the determinants of private expenditure on elementary education for children aged 6 to 14 in the state of Telangana, India. By analyzing data from the National Sample Survey, this research provides valuable insights into the factors influencing household spending on education in a region characterized by diverse socio-economic and demographic dynamics.

Gender bias in educational spending which was found to be favoring male children at all India level was insignificant in Telangana. Though elementary education is free in India, people have to spend from their pockets. Not only they are spending, they are spending unequitable depending on the socio-economic conditions. Economically weaker sections, families who send their child to government schools, scheduled tribes and scheduled castes are negatively associated with the private expenditure on elementary education in the state of Telangana. Gender, rural and other backward class variables which were found to be significant at all India level showed no significance in Telangana.In this context, the reduction in government spending since the state's inception and the stagnation of per capita education spending are concerning. One of the reasons the people of Telangana fought for a separate state was the neglect of the region in terms of development spending in United Andhra Pradesh. Even after a decade since bifurcation, the education sector continues to be neglected, forcing the poor to pay for primary education out of pocket. Additionally, unregulated school fees in private schools further increase the economic burden on parents. As governments worldwide aim to reduce educational disparities, if the Telangana government does not increase its education budget, equitable education will remain a distant reality.

**Declaration of competing Interest**

The authors declare that they have no known competing financial interest or personal relationships that could have appeared to influence the work reported in this paper.

**Funding**

The authors received no financial support for the research, authorship and/or publication of this article.

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