# A STUDY ON THE IMPACT OF EDUCATIONAL EXPENDITURE ON THE ENROLLMENT OF SCHEDULED CATEGORY STUDENTS IN INDIA: AN EMPIRICAL EVIDENCE

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*Abstract: Achievement of higher literacy rates is the aim of all governments which in turn leads to the growth and development of a nation. Education is a tool to remove the poverty and inequalities prevailing in a country. For a country like India, it is more essential to empower its youth and also its population with education to be globally competitive. Ever since India's independence, several policies and strategies have been developed to tackle the massive illiteracy prevailing in the country. Education is ultimately a weapon to address the poverty in the country. Particular attention needs to be drawn towards the scheduled categories of the nation who are very backward in all cases. Meanwhile, several schemes are primarily aimed to give the Right of Right to Education to these backward classes. This provides a need to supervise the budgetary allocations and expenditures for the upliftment of these categories. In this scenario, the present study attempts to testify the impact of the educational spending by the government for both the primary and the secondary education on the enrollments of the students from the scheduled castes and scheduled tribes in India. The present study brings out a clear study with empirical evidence in India. It also describes the literary situation prevailing in Telangana.*

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## Introduction

Education which is being viewed as a powerful tool for the social transformation of a nation and it has the power to eliminate the poverty and inequalities of a country. Apart from this Education will also help to impact the health, crimes and the population growth of the country. It will play a prominent role in the overall development of the community and the country. With the aim to bring equality in the society and to create equal opportunities to the underprivileged and the backward sections of the society who are classified and Scheduled Castes and Scheduled Tribes as per the Government of India. Many plans and policies have been launched and are being in the process aimed towards these sections and their upliftment. Education which is viewed as a powerful tool for the development can be used as a useful tool for the upliftment of the backward sections students and opportunities provided to them will function as the step towards a new beginning in their lives. The schemes which are being run by the national and also the state governments for the development of the backward category students are being widely for their effectiveness and the output produced by them. In fact, apart from the government, very few research organizations are focused on this part. The constitutional Right "Right to Education" hasn't been enjoyed by the various backward groups hence the move by the Government to provide Educational opportunities to the backward section students by enforcing this in the Article 46 of the Indian Constitution which grants the reservation for these groups. Apart from the reservations in the educational institution's initiation of residential and other such as success schools aimed to provide quality education to these sections freely for instance in the state of Telangana has shown an impact on the outcome to a higher degree. With the rising costs of education and it also seems that Education is not a free good and it has turned out to be a Luxury Good and at this juncture the move by the governments to make education readily available to the unreached is laudable.

Ever since the formation of Independent India, the focus of many governments has been on the upliftment of the literacy rate of India to make India a Knowledge Economy. Even though the education was affordable to only some sections then, poverty situations forced the backward class families to keep their children away from the schools. Poverty is believed to be the main reason for the prevalence of Illiteracy which was higher in the Rural areas compared to that of the urban areas. Apart from the rural and urban gaps in literacy the gender parity also exists to a greater extent. Along with this, the disparities in social groups and regions do prevail. The expenditure on the education is still much less than the desired level 6% of GDP in our country. The elementary education which is a basic necessity is being shared by less than 50% of the expenditure on education. India aimed for the Universal Literacy on one side and the other side the reduced expenses form as a hurdle to achieve it. The state of Telangana which ranks 25 in India in the literacy rates among the Indian States with the 66.54% of literacy rate as per 2011 census whereas the national average of 72.98%. Over the years a higher degree of changes has been observed in the literacy rate which is observed from below figure 1.
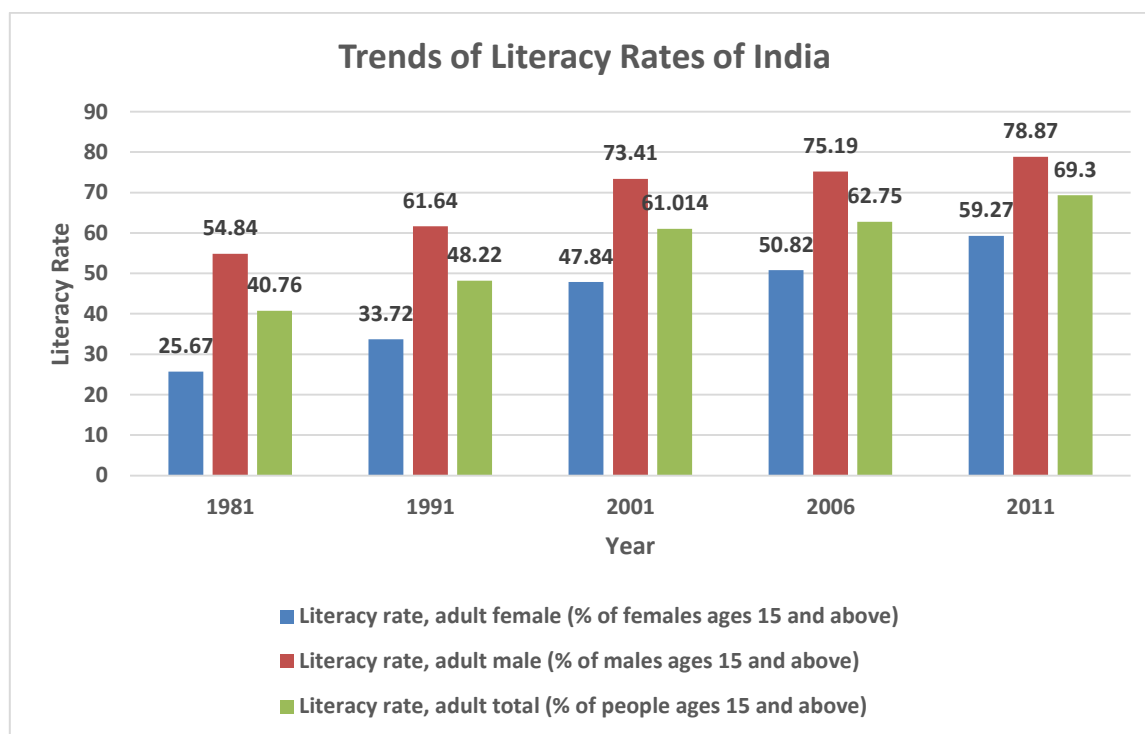
Figure 1. Source: World Bank Database on World Development Indicators

A 29% of change has been observed in India up to 2011 since from 1981 which shows a great leap. The male dominance has been prevailing since from the ages and it resulted in the lower level of literacy rates for the females in some societies women were not even allowed to go for higher education where this has been changed with the time nearly a 60% increase in the women literacy rates can be seen in India since from 1981. As discussed earlier Gender Parity and caste biases were the main hurdles for the Literacy growth of India.  Hence an attempt is being made in this study to focus on the literacy gaps of the Scheduled Castes and Scheduled Tribes of India in General and for the state of Telangana in particular as this region was exposed to the backwardness since from many years and an analysis of the case of Telangana state may result in the outcome of the effects of policies which are focused towards the elimination of Illiteracy among the backward sections and the further policy implications which may form as guidelines.

**The scenario of Literacy rates of the Scheduled Castes and Scheduled Tribes in India:**
The discrimination which prevailed in the Indian sub-continent by the caste had an impact on their development to some extent whereas this formed as a trap from which they can't come out quickly. Later on, moving to their socio-economic status majority of the people of these sections is located in the remote areas and the close proximity to the natural resources such as forests. The infrastructural developments in these areas were slow and also unreachable, their isolation from the outward society also forms a reason for the under development. Education which is viewed as a tool for the upliftment of the backward categories and also acts as a path for their glorious future for instance (Omvedt, 1993) shows that many movements which aimed at the upliftment of these backward sections have focused on education as a primary tool.

The policies of the government focused on the improvement of the educational levels of these backward sections a variety of schemes have been brought into the field for this task. In the year of 1970 the concept of Ashram Schools has been initiated they are the residential schools which are centrally sponsored for the students of the Scheduled Tribe (ST) Categories from the elementary level to higher secondary level. Apart from the ashram schools, many welfare hostels are being run by the state and central governments. It is being observed that even though the residential facilities are being provided the dropout rates are being seen in these schools (Sujatha, 2002). The issues of quality of education and poor infrastructure facilities are prevalent in these schools, and they do form as a primary reason for the dropout rates. The literacy rate of scheduled caste was of 10.27% as of 1961, and as per the 2011 census, it increased to 66.07%.

Over the years it is visible that the government has initiated some policies aimed to up bring the literacy rates of the scheduled castes and the scheduled tribes in India. The hurdles which are regulating the literacy rates are being examined by many researchers some even do point out the less budgetary allocation to the primary and secondary education levels and also highlighting the drop-out rates which are prevalent in a greater degree. For instance, Reddy and Rao (2003).
The paper is divided into five sections, the first section deals with the introduction and literature review, the second one deal with the data and methodology, the third deals with the analysis of the data of the Scheduled Caste and the Scheduled Tribes Students. The fourth section focuses on the situation in particular to the Telangana state. The last section deals with the analysis of the results and policy conclusions.

**Data and Methodology**
The present study focuses on the analyzing the Literacy Rates of the Scheduled Category students and assess the overall output in the enrollments of the Scheduled Castes and Scheduled Tribe Students by linking it with the of Government expenditure per student (% of GDP per capita) in the case of India For the Period of 1987 to 2013. The data of Government expenditure per student, primary (% of GDP per capita) and Government expenditure per student, secondary (% of GDP per capita) is taken from the World Bank Database on World

Development Indicators and the data of the other Variables Enrollment of SC and ST students in the primary and Secondary Schools are taken from the EPW Research Foundation India Time Series.

| Percentage of Literacy Rates Among Scheduled Castes (SC) and Scheduled Tribes (ST) in India | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Years | General Category | | | Scheduled Castes | | | Scheduled Tribes | | | Gap between SC and ST | Gap Between SC and GEN | GAP between ST and GEN |
| | Male | Female | Total | Male | Female | Total | Male | Female | Total | | | |
| 1961 | 40.4 | 15.35 | 28.3 | 16.96 | 3.29 | 10.27 | 13.83 | 3.16 | 8.54 | 1.73 | 18.03 | 19.76 |
| 1971 | 45.96 | 21.91 | 34.45 | 22.36 | 6.44 | 14.67 | 17.63 | 4.85 | 11.3 | 3.37 | 19.78 | 23.15 |
| 1981 | 56.38 | 29.76 | 43.57 | 31.12 | 10.93 | 21.38 | 21.52 | 8.04 | 16.35 | 5.03 | 22.19 | 27.22 |
| 1991 | 64.13 | 39.29 | 52.21 | 49.91 | 23.76 | 37.41 | 40.65 | 18.19 | 29.6 | 7.81 | 14.8 | 22.61 |
| 2001 | 75.3 | 53.7 | 64.8 | 66.64 | 41.9 | 54.69 | 59.17 | 34.76 | 47.1 | 7.59 | 10.11 | 17.7 |
| 2011 | 80.9 | 64.6 | 73 | 75.2 | 56.5 | 66.07 | 68.5 | 49.4 | 58.96 | 7.11 | 6.93 | 14.04 |
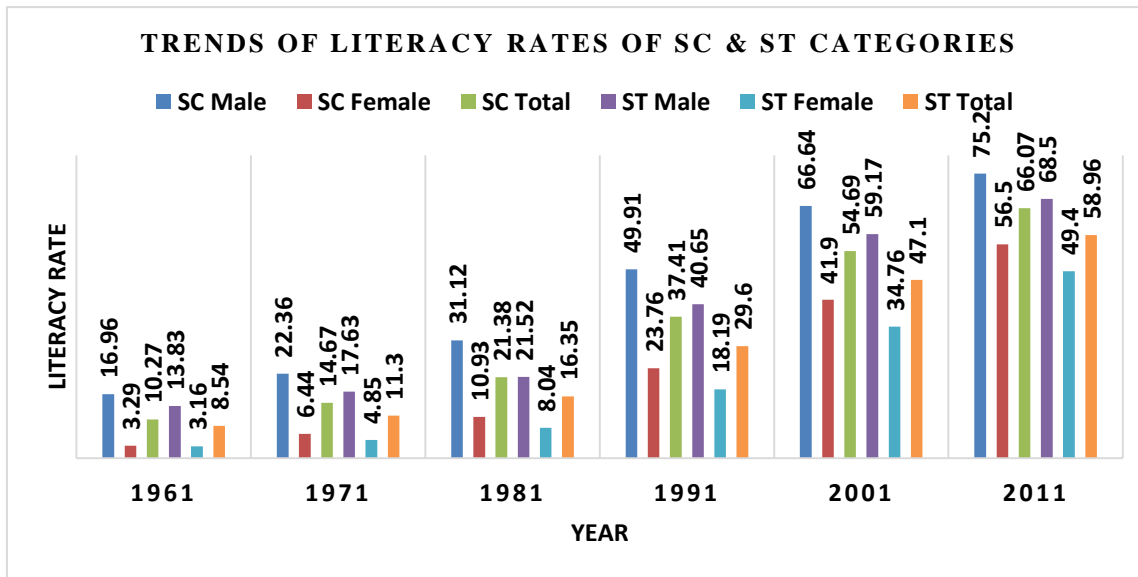


Figure 1 Source: Indiastat Data on Indian Literacy

From the above figures 1 and 2, it is being observed that the gradual increases in the literacy rates of the country over the years. From the period of 1961 to 2011 a higher degree of improvement has been observed even though the growth has achieved the equality hasn't been achieved and the gender and caste parities are being visible. The growth with inequality is being seen when compared with the SC Females and ST Females which are the backward categories the achievement in the SC Females is higher than those of the ST Females. This shows the rise of the disparities among the reserved categories. It is also to be noted that the SC Male literacy outcomes are also improvised than the ST Males. This leads to the discussion of the rise in the categorical indifferences and the inequalities even though all the schemes are being focused equally on the reserved categories. Considering the Gaps in the literacy rates, it is being seen that a wide Gap is being generated between the SC and the ST categories. It has been increased from 1.73 to 7.11 from 1961 to 2011. This also supports the rise in the inequalities among the scheduled categories, and it is also seen the performance of the SC category is far better than those of the ST category regarding the literacy gaps with that of the General Category. Even though the disparities in the literacy rates of the SC's and ST's when compared with that of the general category is diminishing the rate of decrease in the differences between the SC and General category is higher than that of the ST and General category. Hence it also confirms the performance of SC category is comparatively better than that of the ST category.

From the below figure 3, the trend of the literacy rates of the general category can be seen as already witnessed in the above figure the outcome of the females is lower than that of the males. The rate of change is seen from the year 1961 the change in the female literacy is higher than those of the males of the general category the 40.5% has improved the male literacy in the above period whereas the female literacy rates have been shown a change of 49.25%. When the general category literacy rates are compared with that of the SC and ST Categories the improvement in the SC and ST categories is higher than that of the General category this fuels up the spirit of the positive impact of the developments in the literacy of the backward categories.
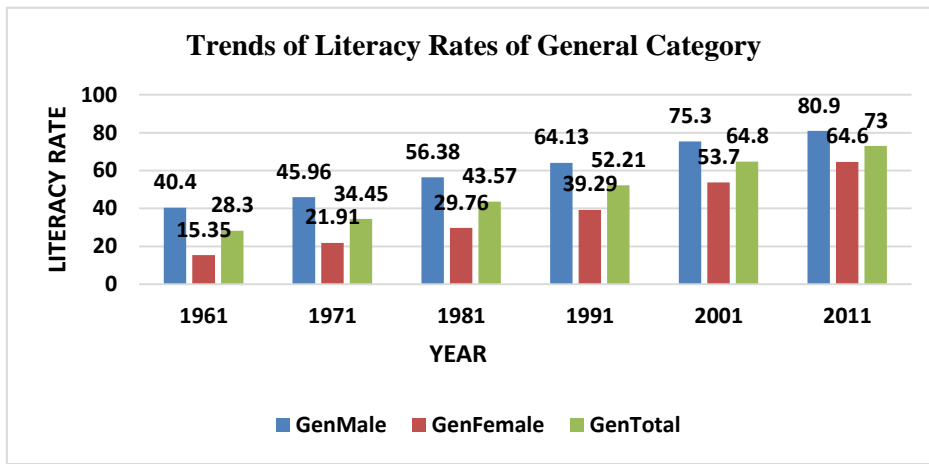
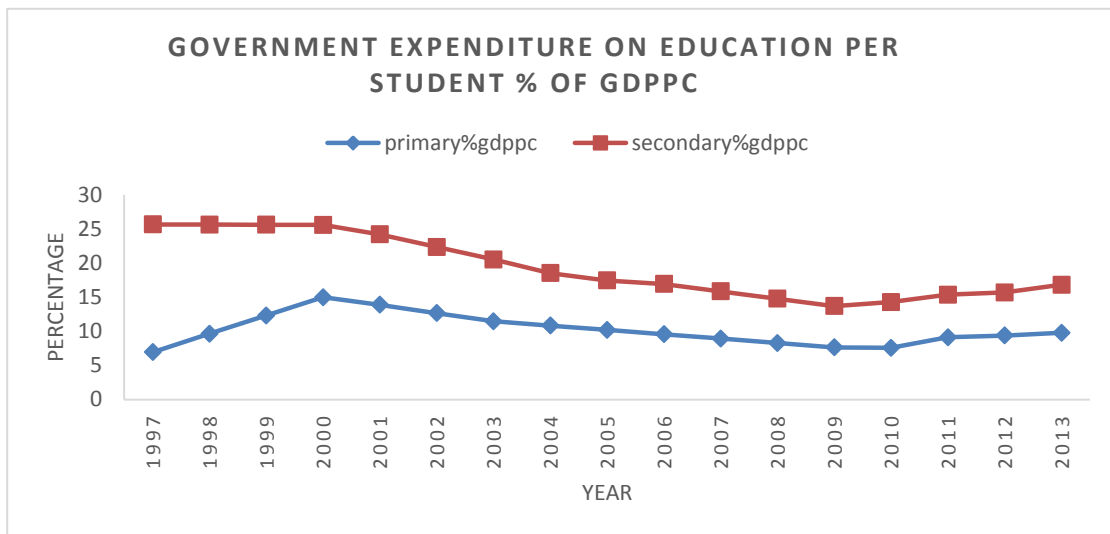Figure 3 Source: India stat Data on Indian Literacy



Figure 4: Source World Bank's Database on World Development Indicators

From the above figure 4, the independent variables of the study the Governments expenditure on the education per student as a percentage of GDP Per Capita is being shown. It is being shown separately for the expenditure on the primary and the secondary education. As usual, the governments expenditure on the primary expenditure per student is far lesser than that of the expenditure on the per student's secondary expenditure. As being noted the expenditure doesn't follow a trend and also doesn't increase as required instead it has been decreasing trend. Least expenditure was in the year 2010 where it was 7.57% for the primary and 13.68% for the secondary. It is hereby this noted that this expenditure was comparatively very low than many other developing countries. Expenditure on the education and the Enrollment are directly related, and the enrollment rates are responsible for the increase in the Literacy rates in the country thereby paving the way for the growth. Hence this study closely analyses these issues.
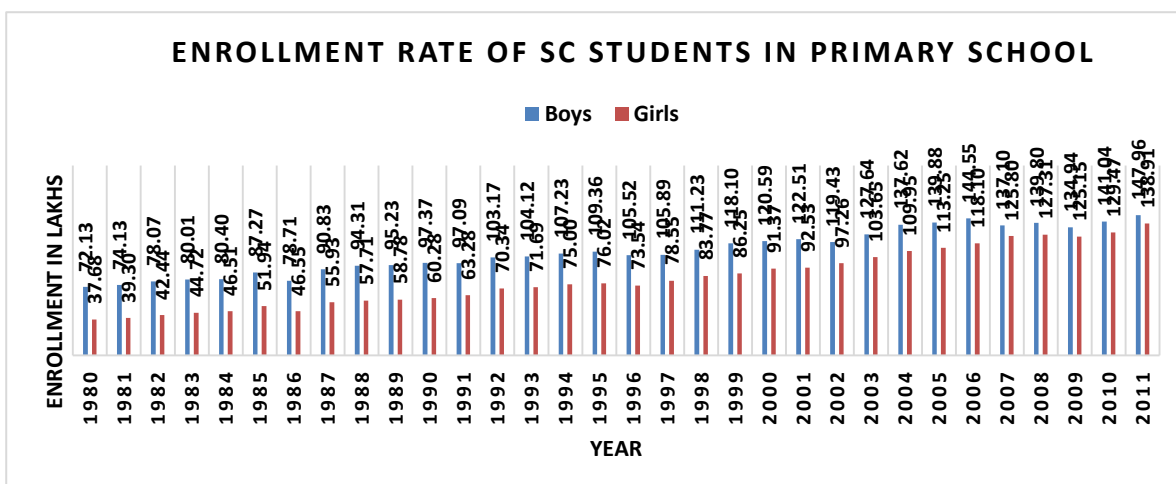


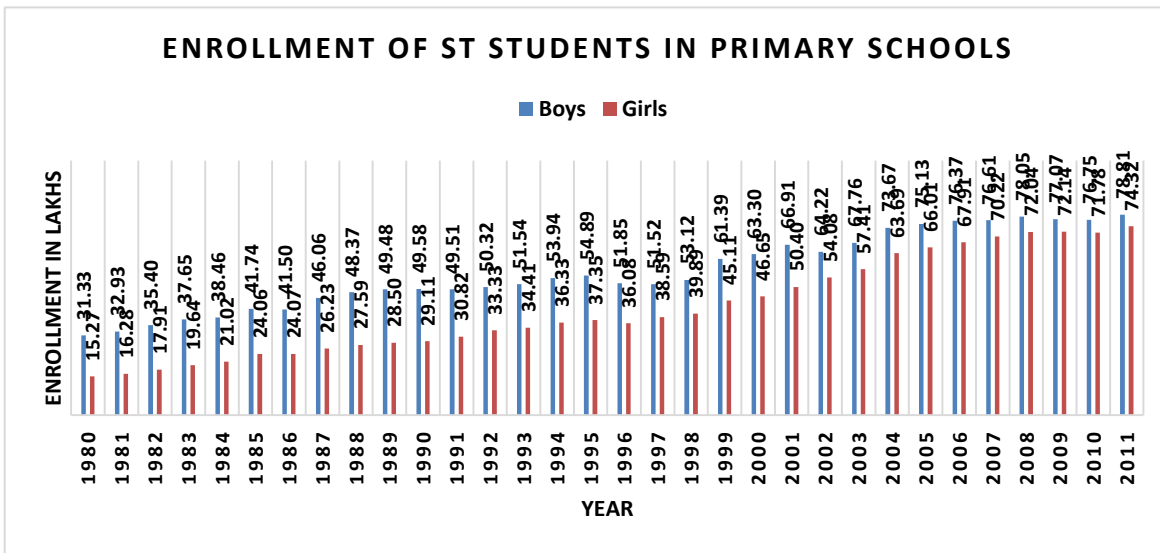Figure 5: Source: EPW Research Foundation India Time series

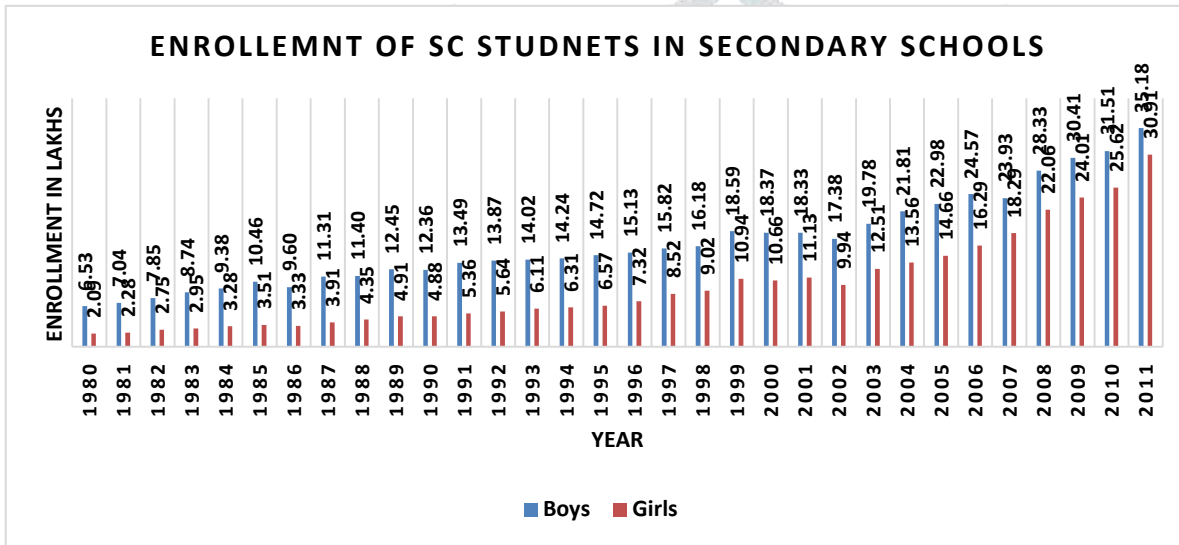Figure 6: Source: EPW Research Foundation India Time series



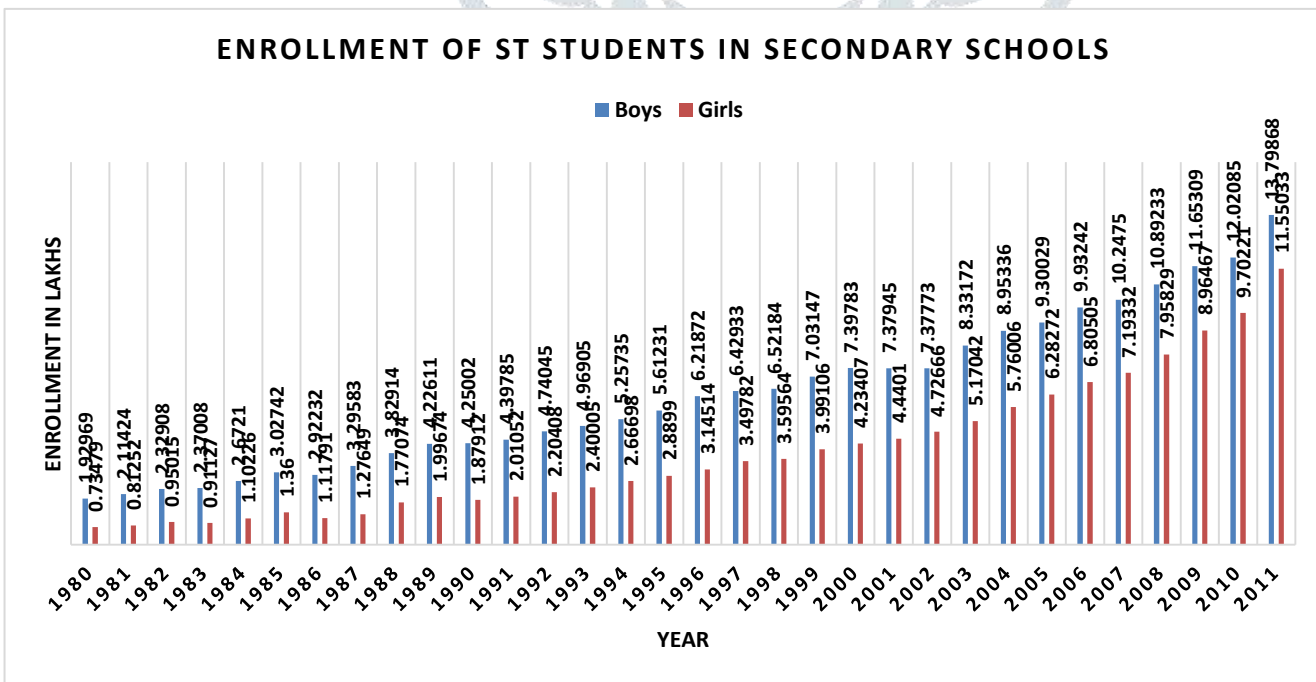Figure 7: Source: EPW Research Foundation India Time series



Figure 8: Source: EPW Research Foundation India Time series

When the categorical comparison is made between the SC and ST castes on the average, the inequalities are being erased as compared with the initial stages, and the average enrollment rate of change in the female students in both the primary and secondary categories have been increased more than that of the boys. In some years the change in the enrollment rates of the boys is slight stagnant. In both the primary and the secondary sections, the enrollments in the ST category are comparatively lower than the SC category students. The differences in the enrollment rates of the primary and secondary rates can be closely observed which shows the dropout rates. Many schemes which do focus on the primary enrollment are found to be effective than those of the secondary enrollment. From the previous figures which we can notice that the governments expenditure on the secondary education is far higher than those of the primary education but the results of the enrollments found to be contradictory which depicts the lower enrollment rates. It also raises the question are these expenditures on secondary/ higher education are going in vain. A clearer picture can only be observed when the policies aimed at the higher education are examined.
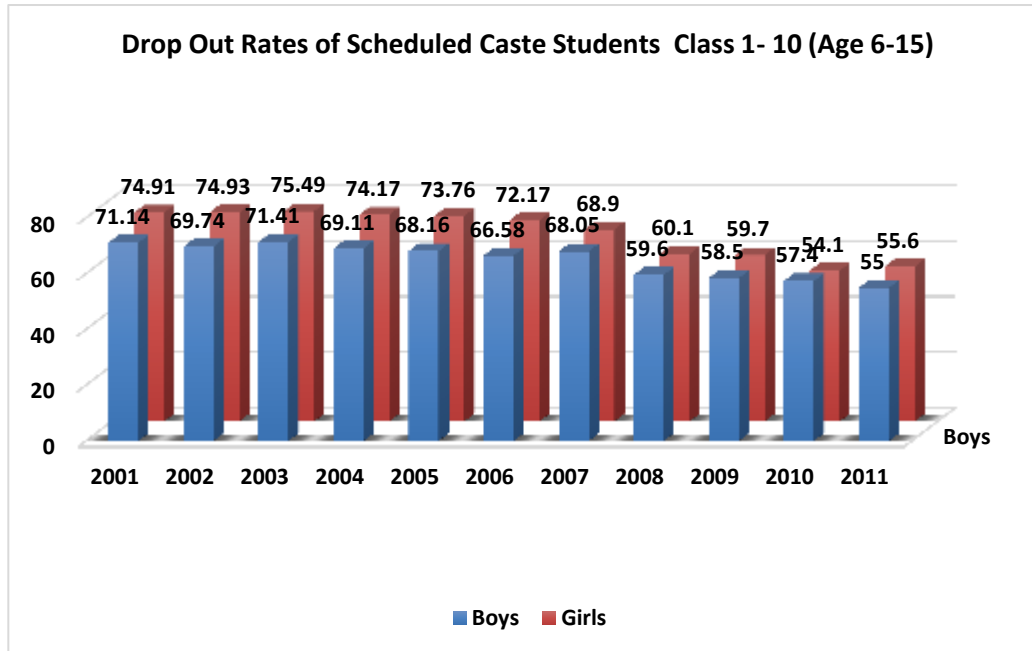


Figure 9: Source: EPW Research Foundation India Time series
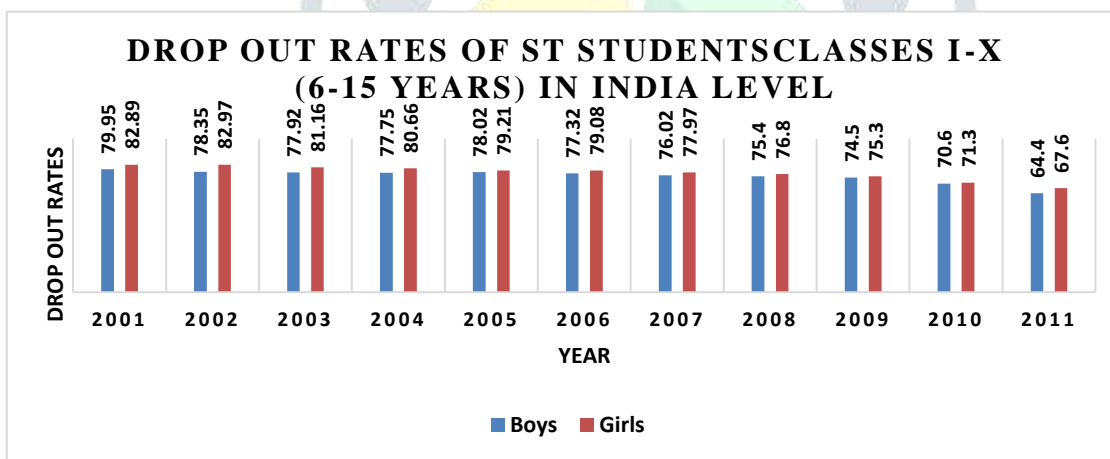


Figure 10: Source: EPW Research Foundation India Time series

As already discussed the dropout rates the above figure 9 and 10 depict the situation of dropouts among the scheduled caste students ranging the age group of 6-15 which generally falls in the category of the class 1-10. In the span of 10 years that is from 2001 to 2011 dropout rate change in the boys is higher than that of the girls. Whereas in the 2011 scenario both the dropout rates end at the 55% mark. The dropout rates of the girl students in the entire period are showing a decreasing trend whereas in the case of the boys it has no particular direction instead it is witnessing a mixed variation of the increase and decreases. In the ST category, the mixed trend is absent whereas the dropout rates are higher than those of the SC category and from 2001 to 2011 in 10 years only 15% dropout rate has been decreased among both the boys and girls.
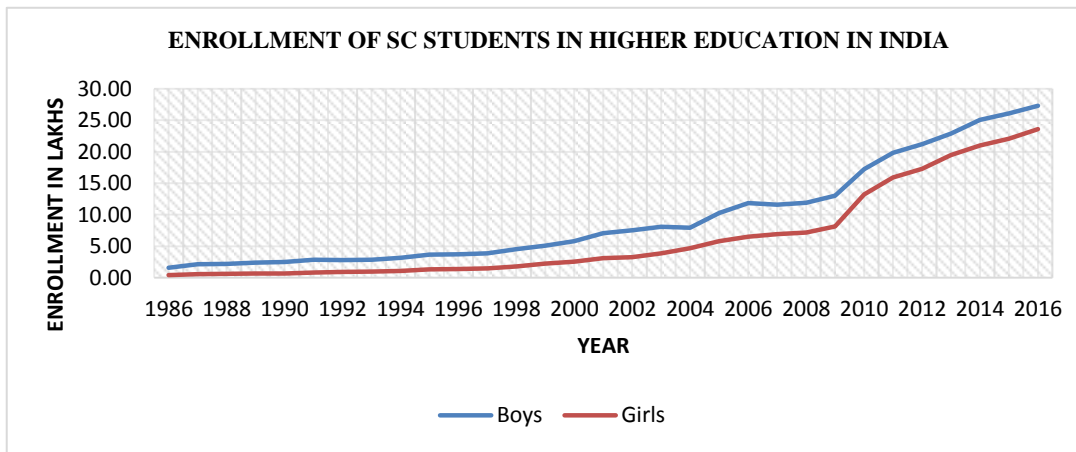
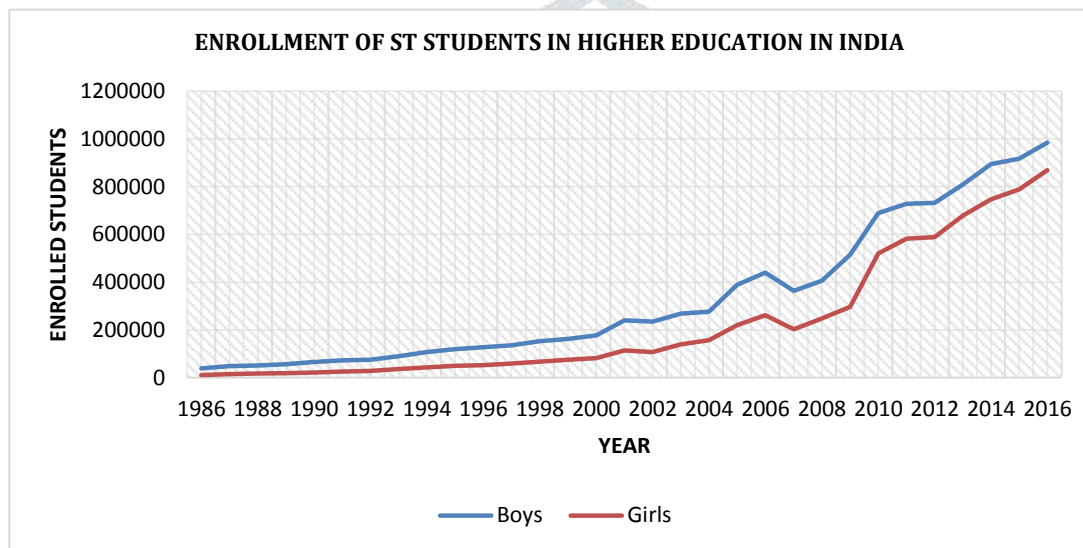Figure 11: Source: EPW Research Foundation India Time series



Figure 12: Source: EPW Research Foundation India Time series

In the above figure 11 and 12 which shows the enrollment of the SC and ST students in the higher education which refers to the colleges. As we are restricted to analyze the impact on the primary and secondary education this data has been used only for the illustration purpose. The figure also shows the apparent situation of enrollment gaps. We have been refocusing on the school education the reason behind this is it acts as a ladder for the higher education.   Thus, many policy analyses are being focused on the school education. It is also to be noted that the factors such as child labor and increase in the costs of education are also termed to be hurdles of educational achievements for the backward categories in particular. From the above figure, it is also can be observed the gaps in the several years where the enrollment rates have fallen for instance in the year 2004, 2008 and 2010.the gender parity is also prevailing here. Dropouts in the ST category seems to be higher than those of the SC category, and even the previous statistics in the SC category are satisfactory than that of ST category. In the year of 2016 when the enrollments in the SC category where nearly 27.6 lakhs of boys and 23 lakhs in the girl's division where enrolled in the higher educational institutions whereas in the ST category situation seems to be worse that only 9.8 lakhs of boys and 8.6 lakhs of girls are enrolled. Hence having a brief introduction about the prevailing literacy situation among the Scheduled category we head to analyze the impact of the expenditures per head for education on the enrollment rates. A separate analysis is being made on both the categories SC and ST the first part deals with the SC category and the Second part deals with the ST Category.

**Testing for Unit Root:**
It is already known to analyze the time series properties of the data it should be tested for the stationarity to make it free from the spurious results. This will make it more transparent to proceed for the cointegration then.  For this purpose, we have employed the Augmented Dickey-Fuller Test (ADF) to test the stationarity of the dataset which is used. The lags are being chosen automatically based on the Schwarz Info Criterion (SIC). The data is being transformed it natural logarithmic form. Elaborating the ADF Unit process gives the following equation. The results are being reported in the below table.

$$\Delta y_t \ = \ \alpha\, y_{t-1} + x_t{}'\delta + \beta_1\Delta y_{t-1} + \beta_2\Delta y_{t-2} + \ldots + \beta_p\Delta y_{t-p} + v_t.$$

**Table 1: Unit Root Test Results for the SC category student's data**

| Variable | At level | | | At First Difference | | | Inference |
|---|---|---|---|---|---|---|---|
| | I | I&T | None | I | I&T | None | |
| LSCPRIMARY ENROLL | 39.46 | 48.92 | 19.09 | 137.17* | 108.74* | 174.60* | I (1) |
| LSCPRIMARY GDPPC | 45.95 | 51.50 | 16.06 | 133.46* | 97.83* | 195.71** | I (1) |
| LSCSECONDARY ENROLL | 14.58 | 17.85 | 9.33 | 82.45* | 74.08* | 96.63* | I (1) |
| LSCSECONDARY GDPPC | 22.72 | 13.92 | 26.14 | 55.90** | 69.23* | 97.44* | I (1) |

*, **, ***, represents 1%, 5% and 10% Level of Significance Respectively.

**Table 2: Unit Root Test Results for the ST category student's data**

| Variable | At level | | | At First Difference | | | Inference |
|---|---|---|---|---|---|---|---|
| | I | I&T | None | I | I&T | None | |
| LSCPRIMARY ENROLL | 55.15 | 51.34 | 54.64 | 69.52* | 39.17* | 116.79** | I I (1) |
| LSCPRIMARY GDPPC | 41.09 | 40.26 | 58.19 | 62.67** | 35.08** | 112.33 | I (1) |
| LSCSECONDARY ENROLL | 25.99 | 24.17 | 34.92 | 52.64* | 48.86* | 97.75*** | I (1) |
| LSCSECONDARY GDPPC | 24.18 | 16.85 | 28.40 | 50.32** | 49.34** | 84.03** | I (1) |

*, **, *** represents 1%, 5% and 10% Level of Significance Respectively.

Stationarity test is very much helpful to avoid spurious and bias result, which may lead to false conclusions. To avoid this problem, the study conducted the unit root tests for all the variables. The above tables 1 and 2 shows that LSCPRIMARY ENROLL, LSCPRIMARY GDPPC, LSCSECONDARY ENROLL, LSCSECONDARY GDPPC are non-stationary at level. But, the null hypothesis of the unit root test is rejected in the first difference at the appropriate significant level. Therefore, all variables which we have taken for the present study are following the first order of integration I (1).

As we have made clear that the variables of I(1) then we proceed to the co-integration process to find the long run relationship among the variables selected.

**Testing for Cointegration**

As we have found that the data series to be stationary to first degree thereby fulfilling the necessary condition to test the cointegration, and hence we proceed for the cointegration test. For this purpose, we employ the Johansen's cointegration test separately for the primary and the secondary education categories of the SC and ST students.

The model of cointegration is that non-stationary time series are cointegrated if a linear combination of these variables is stationary. The present study used the ***Johansen and Juselius (1990) test*** to check the cointegration among the variables. The details of the test are shown below. Johansen suggests two test statistics to test the null hypothesis that numbers of characteristics roots are insignificantly different from unity.

$$\lambda_{trace}(r) - -T \sum_{i-r+1}^{n} \ln(1 - \bar{\lambda} i)$$
$$\lambda_{max}(r, r+1) - -T \ln(1 - \hat{\lambda} i + 1)$$

Where $\lambda i$ estimated characteristic and T is the number of usable observations. The $\lambda trace$ test the null hypothesis is $r = 0$ against the alternative of $r > 0$ and $\lambda max$ test the null hypothesis is $r = 0$ against the alternative of $r = 1$. The null hypothesis for this test is that there are r cointegrating vectors in.

**Johansen's Cointegration Estimation Results**
**Table – 3: Cointegration Results of the Primary Education in the SC category**

| Series: LSCPRIMARYENROLL LSCPRIMARYGDPPC Lags interval (in first differences): 1 to 2 | | | | |
|---|---|---|---|---|
| Unrestricted Cointegration Rank Test (Trace) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.872691 | 41.29928 | 25.87211 | 0.0003 |
| At most 1 | 0.588854 | 12.44329 | 12.51798 | 0.0514 |
| Trace test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.872691 | 28.85599 | 19.38704 | 0.0016 |
| At most 1 | 0.588854 | 12.44329 | 12.51798 | 0.0514 |
| Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values | | | | |

**Table – 4: Cointegration Results of the Secondary Education in the SC category**

| Series: LSSCECONDARYENROLL LSCSECONDARYGDPPC Lags interval (in first differences): 1 to 1 | | | | |
|---|---|---|---|---|
| Unrestricted Cointegration Rank Test (Trace) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.767334 | 29.94632 | 25.87211 | 0.0147 |
| At most 1 | 0.416242 | 8.074031 | 12.51798 | 0.2457 |
| Trace test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.767334 | 21.87229 | 19.38704 | 0.0213 |
| At most 1 | 0.416242 | 8.074031 | 12.51798 | 0.2457 |
| Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values | | | | |

From the above results of 3 and 4 which shows the cointegration between the education expenditure in the primary and secondary education categories for the SC categories. While in the primary section and also in the secondary education section trace test and the max Eigenvalue shows the presence of 1 cointegrating equation in both the cases. That null hypothesis of Trace statistics and Maximum eigenvalue statistics value is less than the 5 % conventional significance level and reject the null hypothesis and accept the alternative hypothesis with concludes two cointegrating equations exist between the coine variables we have selected. This confirms that there is a long run relationship between the educational expenditure and the enrollments in both the primary and secondary education sections of the SC categories. Although only 1 cointegration equation has been found in the above results, but it rejects with the significance of 5% level.

**Table: 5:  Cointegration Results of the Primary Education in the ST category**

| Series: LSSTPRIMARYENROLL LSPRIMARY_GDPPC Lags interval (in first differences): 1 to 1 | | | | |
|---|---|---|---|---|
| Unrestricted Cointegration Rank Test (Trace) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.693349 | 22.74684 | 15.49471 | 0.0034 |
| At most 1 * | 0.284242 | 5.016189 | 3.841466 | 0.0251 |
| Trace test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.693349 | 17.73065 | 14.26460 | 0.0136 |
| At most 1 * | 0.284242 | 5.016189 | 3.841466 | 0.0251 |
| Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values | | | | |

**Table: 6: Cointegration Results of the Secondary Education in the ST category**

| Series: LSSECONDARY_GDPPC LSSTSECONDARYENROLL Lags interval (in first differences): 1 to 2 | | | | |
|---|---|---|---|---|
| Unrestricted Cointegration Rank Test (Trace) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.738595 | 31.63011 | 25.87211 | 0.0086 |
| At most 1 * | 0.600527 | 12.84654 | 12.51798 | 0.0440 |
| Trace test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
| None* | 0.738595 | 32.78357 | 19.38704 | 0.0010 |
| At most 1 * | 0.600527 | 12.84654 | 12.51798 | 0.0440 |
| Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values | | | | |

From the above results of 5 and 6 which examines the data of the primary and the secondary education data of the ST category students and the education expenditure per capita unlike the previous case of the SC category here the cointegration test has shown 2 cointegrating equations which shows a strong long-run relationship. The null hypothesis has been rejected at the 5% level of significance, and this confirms that there is a strong long-run relationship among the expenditure that is GDP Per capita expenditure on each student to the enrollments in the respective sections which are primary and secondary.

**Granger Causality**

To examine the causal relationship among the variables the study have used Granger causality technique proposed by C.W.J. Granger (1969). Granger causality method regresses a variable y on a lagged value of itself and another variable x. If x is considered to be statistically significant, it explains some of the variances of y which is not defined by lagged values of y. This shows that x is causally preceding to y and said to cause y dynamically. The present study employed the following model specification of Granger causality.

$$Y_t = \sum_{i=1}^{n} \delta_i \, y_{t-i} + \sum_{i=1}^{n} \gamma_i \, x_{t-i} + u_t$$

The null hypothesis (H0) in each case is that the variable under consideration does not Granger cause the other variable. Then null hypothesis tested against the alternative hypothesis, and we apply the F-test which follows the F-distribution. If the computed F-Value exceeds the critical F-value at the chosen level of significance, the null hypothesis will be rejected and vice versa. The Granger causality test depends critically on the number of lagged terms introduced in the model.

**Table 7:  Causality results for the Scheduled Caste Students**

| Pairwise Granger Causality Tests Lags: 1 | | | |
|---|---|---|---|
| Null Hypothesis: | Obs | F-Statistic | Prob. |
| SCPRIMARYENROLL does not Granger Cause PRIMARY_GDPPC | 16 | 8.02242 | 0.0141 |
| PRIMARY_GDPPC does not Granger Cause SCPRIMARYENROLL | | 5.18209 | 0.0466 |
| Pairwise Granger Causality Tests Lags: 1 | | | |
| Null Hypothesis: | Obs | F-Statistic | Prob. |
| SCSECONDARYENROLL does not Granger Cause SECONDARY_GDPPC | 16 | 8.93886 | 0.0104 |
| SECONDARY_GDPPC does not Granger Cause SCSECONDARYENROLL | | 6.25665 | 0.0409 |

It is being observed from Table 7, that there exists the bi-directional causality among the primary education enrollment and the expenditure on the education as GDP Per capita.

**Table 8:  Causality Results for the Scheduled Tribe Students**

| Pairwise Granger Causality Tests Lags: 1 | | | |
|---|---|---|---|
| Null Hypothesis: | Obs | F-Statistic | Prob. |
| STPRIMARYENROLL does not Granger Cause PRIMARY_GDPPC | 16 | 14.7025 | 0.0021 |
| PRIMARY_GDPPC does not Granger Cause STPRIMARYENROLL | | 12.28322 | 0.0436 |
| Pairwise Granger Causality Tests Lags: 1 | | | |
| Null Hypothesis: | Obs | F-Statistic | Prob. |
| STSECONDARYENROLL does not Granger Cause SECONDARY_GDPPC | 16 | 6.48061 | 0.0244 |
| SECONDARY_GDPPC does not Granger Cause STSECONDARYENROLL | | 8.73757 | 0.0480 |

From the above table 8, it is being viewed the presence of the Bi-directional Causality among all the variables which include the primary and also the secondary education variables and the education expenditure. The entire null hypothesis is being rejected at 5% level. Therefore, it is clear that the long run relationship between the education expenditure and the enrollment of the backward category students are in being in relation with each other. It is already noted that the enrollments of the SC students in both the primary and secondary category are far better than those of the ST category students it is also viewed in the causality results which shows a weak causality running from the GDPP expenditure to enrollment.

**A view on the Literary Situations in respect to Telangana State**

| Category | RATIO | For 2015-16 | |
|---|---|---|---|
| Gross Enrollment | All | SCs | STs |
| Classes I-V | 102.48 | 105.37 | 108.14 |
| Classes VI-VIII | 90.34 | 92.17 | 88026 |
| Classes IX-X | 80.20 | 86.18 | 74.64 |
| **Dropout Rate** | **RATE** | | |
| Classes I-V | 16.33 | 21.87 | 38.53 |
| Classes VI-VIII | 29.42 | 29.93 | 52.57 |
| Classes IX-X | 36.99 | 41.14 | 61.33 |

Source: Department of Economics and Statistics, Telangana

In the above table the literary situation in the Telangana state has been shown as compared to the overall statistics of India to the Telangana state separately the gross enrollment ratios in both the primary and also the secondary levels of education are being quite satisfactory even though the plan wise impact studies and the previous trends in the data has not been recorded as it is newly formed. Even though comparatively among the primary states in India, Telangana stands at the rough position of 10 in the literary rankings whereas the emergence of the various plans and schemes focused towards the SC's and ST'S in the State of Telangana it is also being found to be the most effective in controlling the dropout rates and even the effective implication of the residential schools and also the various ashram schools in the state shows promising returns on the investments made for the upliftment of the literary situation in the state. The dropout rates in the state of Telangana are quite disappointing among the SC and ST students in the class range of 6-8 and 9-10 where the basic foundation for the higher education is being laid at this age group of students. The policies aimed at uplifting of this may found to be fruitful in the upcoming years as the implementation phase has been taking the acute phase recently. The state contribution towards the education and implementation of the schemes will certainly lead to the uplifting of the education and the literary situation.

| Government Schools and Ashram Schools, 2015-16 | | | | |
|---|---|---|---|---|
| Category | Hostels | | Ashram Schools | |
| | Nos. | Students | Nos. | Students |
| Scheduled Castes | 888 | 72862 | - | - |
| Scheduled Tribes | 170 | 30882 | 302 | 84740 |
| Backward Classes | 733 | 67655 | - | - |

Source: Department of Economics and Statistics, Telangana

From the above table, the total schools and hostels in the state of Telangana can be seen the ashram school consists of the highest number of students numbering to 84740. As par with the comparison to the rest of the states in the enrollments of the scheduled categories students Telangana performs pretty well and the comparison of the dropout rates of the other major states also shows the difference in the schools and hostels which are being operated for the scheduled categories students. The performance of the Telangana state seems to be promising instead the less enrollment of students from the ST category and the also the higher dropout rates of the Scheduled Tribe category compared to that of the Scheduled Castes is quite disturbing.

**Conclusion and Policy Implications**

Even though many policies are being aimed at the upliftment of the scheduled category students and their literary outcomes the study makes a definite contribution in testing the impact of the expenditure of the government on education and the resultant of the enrollment rates. The results are in support of the increasing of the expenditure on the upliftment of the backward categories, and the scheduled categories will undoubtedly improve their enrollments, and this is what the long run relationship implicates. Later on, moving to the Categorical inequalities among the scheduled categories is also a disturbing outcome as the policies are equally aimed for the upliftment of the backward categories students the enrollment of the Scheduled Tribe students is far lesser than those of the scheduled caste student and also the dropout rates among the ST students is even higher. This brings out the policy implication and further literature gap to testify the policy impacts on the scheduled tribe student's literacy outcomes. The status of the scheduled tribe students in the state of Telangana is also disturbing as it matches with that of India. The dropout rates among the Scheduled Tribes should be considered for the changes in the policy formulations. Embedding the tribal culture and also their indigenous knowledge and history in the education for this category may further help in regulating the dropout rates. Moreover, establishing residential schools in the areas nearer to their surveillance rather than relocating them from native regions may also have an impact on curbing the dropout rates. The Tribal welfare residential educational institutions should be expanded and also improving the quality of education. Training and recruiting the native Tribal teachers in these schools along with that of the teachers from the areas will be an added benefit in promoting the literacy rate among these categories. Hence more concentration and policy directions are to be developed towards the scheduled tribe students to achieve the growth in the literacy rates along with the equality.

**References**

[1] Economic and Political Research Foundation India Time Series Database, Accessed on June 2018.

[2] Govinda, Rangachar, ed. *India education report*. New Delhi: Oxford University Press, 2002.

[3] Granger, 1969. Investigating causal relations by econometrics models and cross spectral methods. Econometrica, 37(3), pp. 424-438.

[4] Johansen, S. and Juselius, K., 1990. Maximum likelihood estimation and inference on cointegration with applications to the demand for money. Oxford Bulletin of Economics and Statistics, 52(2), pp. 169-210

[5]   Omvedt, G. (1993). *Reinventing revolution: New social movements and the socialist tradition in India*. ME Sharpe.

[6]   Reddy, V. Ratna Reddy and R. Nageswara Rao. *Primary Education: Progress and Constraints*. Economic and Political Weekly, Vol. 38, No. 12/13 (Mar. 22 -Apr. 4, 2003), pp. 1242-1251.

[7]   World Bank database on the World Development Indicators, Accessed in June 2018.