Determinants of Female Literacy of Scheduled Tribes in Odisha

Dr. Atal Bihari Das, Assistant Professor,
Department of Economics, Ravenshaw University, Cuttack, Orissa, India-753003

Dr. Dukhabandhu Sahoo, Assistant Professor,
School of HSS & M, IIT Bhubaneswar, Orissa, India-751013

Abstract:
This paper examines the determinants of female literacy of Scheduled Tribes (STs) in Odisha, which is one of the tribal dominated states of India. Based on secondary data the determinants of literacy are explored for ST females. The study analyses the results using Sophers’ disparity index and multivariate regression model. The findings clearly indicate that literacy rate is positively related to male literacy of STs, per cent of ST teachers, per cent of female teachers and per cent of schools within habitations, and negatively related to per cent of schools without teachers, per cent of ST population, wage rate, dependency rate, female work participation Rate and poverty. Interestingly, a negative association emerges between women’s work participation and female literacy. The findings in the paper suggest that the government needs to initiate special efforts to increase the participation of ST females in education like provision of incentive schemes for girls, appointment of teachers in schools having without teachers, opening of schools in each habitations in the remote rural and tribal areas of Odisha.

Introduction
Literacy is considered one of the crucial indicators of education. Several research studies have shown that there is a strong association between the level of literacy and socio-economic development of the people. After independence, India was poised over promoting with special care the educational and economic interest of the people, of the scheduled castes (SCs) and scheduled tribes (STs). Accordingly, the National Policy of Education, 1986 emphasised on the equalisation of scheduled castes and scheduled tribes with non-scheduled castes and non-scheduled tribe population at all levels of education. The government has made concerted efforts through various incentive schemes to raise the literacy level and educational status of STs. No doubt, achievement of the country in literacy rate has been very significant during the last decade. But total literacy remains yet a distant dream and the deadline by which total literacy is to be achieved is being extended year after year. Besides low literacy rate at the national and state level, disparities across regions, genders and social groups are yet another matter of concern in the sphere of education. Female literacy rate has been increasing as in the case of male, but the former has remained much lower than the latter. Across social groups, the STs are the least literate and illiteracy is very high among their women folk. No doubt, environmental disadvantage stands in the way of their accessing benefits of development. STs remain outside the mainstream of economic development. Changes in their attitude, values and skills can be brought about through increasing their literacy and education.

Illiteracy is perceived as a reflection of social, political and economic inequality obtaining in a society (Ramdas, 1987 and 1990). An illiterate person cannot contribute his/her full share towards community life. Illiteracy is a great hurdle on the way of social mobility. Illiterate women tend to perceive themselves as ‘empty pots’ and ‘hollow boxes’. They do not see themselves as fully participating and hence contributing members of a society. All these above factors point out that illiteracy may be considered a stumbling block for socio-economic development of a particular gender, community and region.

Indian society suffers from gender disparity in literacy, health care and employment. Higher illiteracy among females particularly among ST females resulted in a significant disparity in literacy. Their knowledge about ecology, community cleanliness, raising children, managing households under unstable circumstances etc. amounted to nothing mainly because of their lack of literacy and schooling. Lack of education among tribes stands in the way of their employability (Mukhopadhyay and Rajaraman, 2007). Hence, the importance of literacy/education in the tribal dominated state like Odisha.

However, opportunities for literacy and education are dependent upon the socio-economic environment in which a person was born or the conditions obtaining in the family. The low literacy among the STs in general and ST females in particular is attributed to various socio-economic factors. Pande (2001) observed that enrolment of ST girls was affected mostly on account of traditional attitude, lack of physical access to schools and teachers absenteeism. Debi (2000) found that economic status, education, school accessibility and adult literacy has a significant positive impact where as female and child work participation rate has negative impact on literacy/educational attainment of females. There was a negative correlation between the proportion of non-tribal population and educational development of the tribals (Shah and Patel, 1985).

In this background, the paper makes an attempt to examine the following issues:

i) Is there any gender disparity in literacy between STs and non-STs?

ii) What are the determinants of female literacy of STs?

The present study examines the above issues in the context of ST females of Odisha because literacy rate among
ST females is very low and the gender disparity is assumed to be very high among STs. Further, Odisha is one of the least developed states having 22.2 per cent (2001 Census) of its population being scheduled tribes in the Indian federation.

The present paper is organised into four sections. The first section deals with the introduction with relevant research questions. The analytical framework is discussed in the second section. The third section presents the results and discussion. The last section provides the concluding observation and suggestions.

2.2: Tools and Techniques Used

i. Disparity Index in Literacy between ST and Non-ST

The disparity index in literacy between ST and non-ST by using the following formula:

\[
\text{Disparity Index between ST and non-ST} = \frac{\text{ST Literacy Rate}}{\text{NST Literacy Rate}} - 1
\]

ii. Gender Disparity Index in Literacy

Gender disparity index in literacy is calculated by using Sophers’ Disparity Index

\[
\text{Gender Disparity Index} = \log\left(\frac{X_2}{X_1}\right) + \log\left(\frac{Q - X_1}{Q - X_2}\right)
\]

Where,

\[X_2 > X_1 \text{ and } Q = 200\]

\[X_1 = \text{ST Female Literacy Rate}\]

\[X_2 = \text{ST Male Literacy Rate}\]

The higher the value of the index, higher is the extent of gender disparity.

iii. The multiple regression model used to identify the determinants of female literacy of Scheduled Tribes. The model is as follows:

\[L_{TF} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + U_i\]

Where,

\[L_{TF} = \text{Literacy of ST Females}\]

\[X_1 = \text{Male literacy of STs}\]

\[X_2 = \text{Per cent of ST teachers}\]

\[X_3 = \text{Per cent of ST teachers}\]

\[X_4 = \text{Per cent of ST Population}\]

\[X_5 = \text{Per cent of Schools without Teachers}\]

\[X_6 = \text{Per cent of Schools within Habitations}\]

\[X_7 = \text{Wage Rate}\]

\[X_8 = \text{Dependency Rate}\]

\[X_9 = \text{Female Work Participation Rate}\]

\[U_i = \text{the error term}\]

\[\alpha \text{ and } \beta_i \text{ are the intercept and regression coefficients respectively}\]

3. Results and Discussion

3.1: Disparity in Literacy between STs and Non-STs in Odisha

As expected, the level of literacy among STs has always been a matter of concern. Only 37.37 per cent of STs in Odisha are literate, while tribal literacy rate in India is 47.1 per cent. Among the STs, literacy rate of females is much lower than that of males. The literacy rate of males among them was 59.17 per cent, while only 34.76 per cent of females were literate in India. Literacy rates of males and females in Odisha were 51.48 per cent and 23.37 per cent respectively as per 2001 census.

\[\text{Table 1: Disparity in Literacy between STs and Non-STs in Odisha, 2001}\]

<table>
<thead>
<tr>
<th>Castes</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST</td>
<td>51.48</td>
<td>23.37</td>
<td>37.37</td>
</tr>
<tr>
<td>Non-ST</td>
<td>81.69</td>
<td>58.04</td>
<td>70.06</td>
</tr>
<tr>
<td>Disparity Index (ST &amp; Non-ST)</td>
<td>0.587</td>
<td>1.484</td>
<td>0.875</td>
</tr>
</tbody>
</table>

Source: Census of India, 2001

Compared to 70.06 per cent of literacy among non-STs, literacy rate of the STs in Odisha was 37.37 per cent. In other words, literacy rate of non-STs was about two times that of STs. The estimated disparity index in literacy between ST and non-ST worked out at 0.875. As regards male literacy rate, the situation is not different. While 81.69 per cent of non-ST male were literate, literacy rate among their ST counterparts was 51.48 per cent. The disparity...
index in literacy between ST and non-ST males in Odisha worked out at 0.587. Literacy rate of non-ST women was 58.04 per cent compared to 23.37 per cent of ST women, implying thereby that more than 3/4th of ST women were illiterate and the disparity index between them is estimated at 1.484 (Table-1).

3.2: Gender Disparity in Literacy Rate

Literacy among females is always found to be less than that among males. As stated earlier, literacy rate of ST females is extremely low and more so in backward and rural areas. Non-ST women are more literate than ST women. Therefore, the difference between male and female literacy rates is less in the case of non-ST than ST.

Gender disparity in literacy is estimated by using Sopher’s Disparity Index. Table -2 presents estimates of Gender Disparity Index (GDI) in literacy of ST and non-ST in Odisha. It is observed that the gender disparity in literacy of STs has recorded a significant decline from 1991 to 2001 census. The disparity index for ST works out at 0.418, which is higher than the estimate of 0.228 for non-ST in 2001. It emerges that the range of variation is wide among STs than the non-ST population. From the above analysis it is clear that the extremely low level of literacy rate among the STs in general and females in particular may be one of the most important reasons for their overall backwardness as they are not able to participate in the process of development.

Table- 2: Gender Disparity Index in Literacy Rate in Odisha

<table>
<thead>
<tr>
<th>Year</th>
<th>ST</th>
<th>Non-ST</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>0.604</td>
<td>294</td>
<td>0.352</td>
</tr>
<tr>
<td>2001</td>
<td>0.418</td>
<td>0.228</td>
<td>0.253</td>
</tr>
</tbody>
</table>

Source :Census of India, 1991, and 2001

3.3: Determinants of Female Literacy of Scheduled Tribes

The growth of literacy/education among the scheduled tribe women is determined by a number of factors like economic, socio-cultural, schooling, home environment, demographic factors and so on. The determinants considered in the present study have been included in the regression model specified above. The regression results are presented below.

The Regression Results with District Level Data N=30
(Independent Variable : Female Literacy of Scheduled Tribes)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Independent Variables</th>
<th>Coefficient Values</th>
<th>‘t’ Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male literacy of STs</td>
<td>0.16</td>
<td>4.13</td>
</tr>
<tr>
<td>2</td>
<td>Per cent of ST teachers</td>
<td>0.05</td>
<td>6.21*</td>
</tr>
<tr>
<td>3</td>
<td>Per cent of Female Teachers</td>
<td>0.10</td>
<td>3.41*</td>
</tr>
<tr>
<td>4</td>
<td>Per cent of Schools without Teachers</td>
<td>-0.18</td>
<td>-2.24</td>
</tr>
<tr>
<td>5</td>
<td>Per cent of Schools within Habitations</td>
<td>0.21</td>
<td>2.92*</td>
</tr>
<tr>
<td>6</td>
<td>Wage Rate</td>
<td>0.02</td>
<td>0.98</td>
</tr>
<tr>
<td>7</td>
<td>Dependency Rate</td>
<td>-0.11</td>
<td>-3.51*</td>
</tr>
<tr>
<td>8</td>
<td>Per cent of ST Population</td>
<td>-0.09</td>
<td>-1.25</td>
</tr>
<tr>
<td>9</td>
<td>Female Work Participation Rate</td>
<td>-0.40</td>
<td>-2.22</td>
</tr>
<tr>
<td>10</td>
<td>Per cent of BPL Population</td>
<td>-0.06</td>
<td>-2.45*</td>
</tr>
<tr>
<td>11</td>
<td>Constant</td>
<td>14.52</td>
<td>2.86</td>
</tr>
<tr>
<td>12</td>
<td>Adjusted R Square</td>
<td></td>
<td>72.45</td>
</tr>
</tbody>
</table>

Note: * Significant at 5 per cent level

For the district level analysis we have used the data of 2001 for the 30 districts of Odisha. The dependent variable in the regression equation is female literacy of STs. The independent variables are male literacy of STs, per cent of ST teachers, per cent of female teachers, per cent of schools without teachers, per cent of schools within habitations, wage rate, dependency rate, per cent of ST population, female work participation rate and per cent of BPL population. From the regression results it is observed that female literacy of STs is positively related to male literacy, per cent of ST teachers, per cent of female teachers, per cent of schools within habitations, wage rate and negatively related to per cent of school without teachers, dependency ratio, per cent of ST population, female work participation rate and per cent of BPL population. It is found that among the ST females if the work participation rate increases by 1 per cent literacy decreases by 0.40 per cent.

The possible reason behind this is that higher levels of work force participation by ST women could in turn require some of the children to stay at home and tend to household chores and take care of the younger siblings which in turn reduce their demand for schooling. It is also interesting to note that the coefficient of per cent of schools within habitations comes out as positive and significant. This implies that if school is within the habitations, the demand for schooling is more. Per cent of ST population has a negative and significant effect on the literacy of ST women. This implies that in the highly ST populated area; the demand for education is affected to a great extent while it is not affected in the districts with moderate ST population.

4. Concluding Observations and Suggestions

The main findings of the study are:
i. Literacy rate of STs is very low and it is more so among ST females. The disparity in literacy is more among the STs than non-STs. The gender disparity between literacy of males and females is very high among STs than non-STs.

ii. The most significant determinants of literacy/educational participation are male literacy, per cent of schools without teachers, per cent of schools within habitations, dependency rate, per cent of ST population, female work participation rate and per cent of BPL population. The influence of these factors is found to be more pronounced among ST population and more particularly among the ST females.

Therefore, it is suggested that the government has to take special measures like opening of schools in each habitations in remote rural and tribal areas, provision of incentives schemes for ST girls, appointment of teachers in schools having without teachers.

References


