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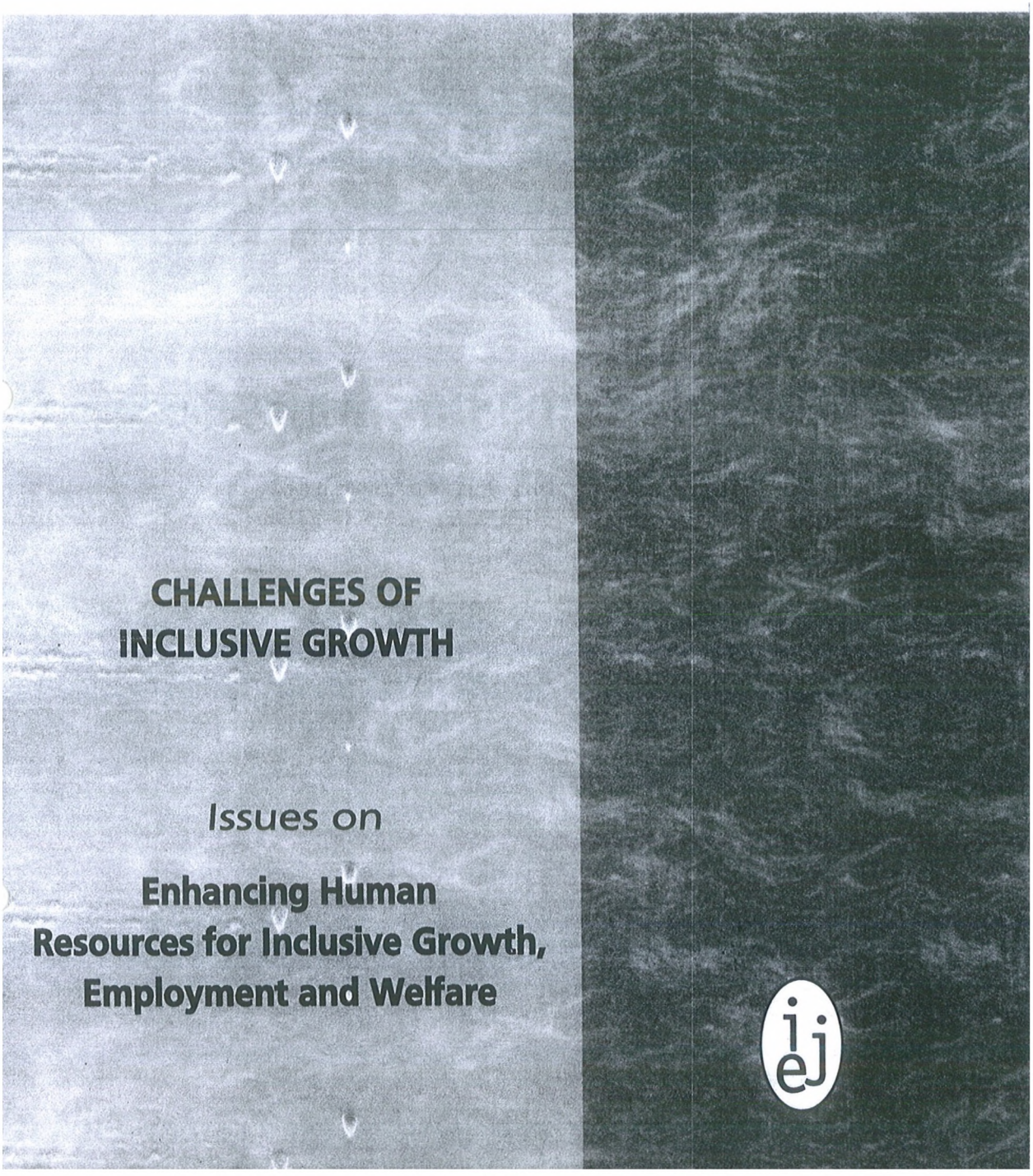

problems and perspective on tribal education in different regions.

As such, a research study on the "*Linkage between educational attainment and inclusive growth – an empirical analysis with specific reference to Scheduled tribes of Nilgiris district in Tamil Nadu*" was formulated with the following objectives:

- To study socio-economic profile of the selected tribal population;
- to identify the factors determining enrolment and dropout of tribal children;
- To find out the problems in tribal education and
- To recommend measures for the improvement of tribal education.

Methodology

The study was related to scheduled tribes in Gudalur Taluk of Nilgiris District. The required data relating to general background, family background, enrolment, dropout etc were collected by administering the interview schedule to the head of households in the selected area and the study covered 100 households.

Hypothesis Formulated

1. The enrolment of tribal students is not significantly associated with educational status of father and mother, occupational status of father and mother, size of the family, type of family, earnings, cost of education, distance and landownership and
2. Educational status of father and mother, occupational status of father and mother, size of the family, type of family, cost of education, distance and property do not have significant impact on dropout.

Quantitative Tools Applied

Probit model

The probit model is used to denote a regression model in which the dependent variable y is a dichotomons variable taking the value of one or zero. The variable y is an indicator variable that denotes the occurrence or non occurrence of an event.

It emerges from the normal cumulative distribution function. Given the assumption of normality, the probability that I* is less than or equal to I* can be computed from the standardized normal cumulative distributive function as

$$P_i = P(y = 1/x) = P(I^* < I_i)$$
$$= P(Zi < \beta_1 + \beta_2 x_i)$$
$$= F(\beta_1 + \beta_2 X_i)$$

where P(y = 1/x) means the probability that an event occurs given the value of the X or explanatory variable where zi is the standard moral variate 2 $\sim N(0, \sigma^2)$.

The current study used probit model to identify the determinants of the likelihood of tribal boys and girls attending school/college. The model is specified as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10}$$

Here Y = 1 if the child is enrolled in the school

Linkage Between Educational Attainment and Inclusive Growth – An Empirical Analysis with Specific Reference to Scheduled Tribes of Nilgiris District in Tamil Nadu

R. Annapoorani and K. Krithiga

Introduction

Education is an important human resource and a means of reducing inequality in society. Knowledge and skills, acquired through education helps one to achieve a desired quality of life. According to Manmohan Singh (2006), "Education is an urgent priority, which needs to be attended to immediately." In the view of George (2007), education is crucial to development as it provides the individual with adequate skills for participating in various economic activities.

The importance of education is more pronounced for the tribals since they account for sizeable proportion of India's population 8.21 per cent according to 2001 census. For the development of the tribal community education is most important element. It is a powerful instrument to change the values and attitude of the people and to create in them the urge of the necessary motivation to achieve social mobility and social ascendancy. Realising the importance of tribal education the Government of India had formulated many programmes to improve tribal education- such as Sarva Shiksha Abhiyan, establishment of Ashram schools, provision of mid day meals and scholarships.

However, tribal literacy rate was low 41.5 per cent in 2001 and difference between the literacy rate of general population and that of scheduled tribes has been around 15 per cent in 2001. While at the national level, literacy among males was estimated as 75.9 per cent and for females as 54.2 per cent, the corresponding figures with regard to tribal males and females were found to be 59.2 per cent and 34.8 per cent. Further there exists disparity in literacy in various tribal groups and also between males and females

In India, few research studies – Ashuthosh Thakar (2001), Raghunath Rath (2006), Kukreti (2004) etc have analysed the trend in tribal education and problems of tribal education based on national survey. But the national surveys should be supplemented by intensive studies on individual tribal groups, so as to gain a clear and comprehensive understanding of the

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Y = 0 if the child is not enrolled in the school
X1 = Father's Education(1 if father is educated and 0 if the father is illiterate)
X2 = Mother's Education(1 if mother is educated and 0 if the mother is illiterate)
X3 = Family size (in number)
X4 = Father's Occupation(1 if the father is employed and 0 if the father is unemployed)
X5 = Mother's Occupation (1 if the mother is employed and 0 if the mother is unemployed)
X6 = Type of family(1 for joint family and 0 for nuclear family)
X7 = Landownership (in cents)
X8 = Cost of education(in rupees)
X9 = Distance(in kilometers)
X10 = Earnings(in rupees)

Binary Logistic Regression

Binary logistic regression is used to predict a discrete outcome when the dependent variable has two outcomes. To define a relationship bounded by zero and one, logistic regression uses an assured relationship between the dependent and independent variables.

Logistic regression computes the log odds for a particular outcome. The odds of an outcome are given by the ratio of the probability of it happening and not happening as P/(1-P) where P is the probability of an event. It is represented as

$$\frac{P}{(1-P)} = e^{\beta 0 + \beta 1 x 1 + \ldots\ldots \beta n Xn}$$

The estimated coefficients (β0, β1, β2..... βn) are actually measures of the change in the ratio of the probabilities.

In the current study binary logistic regression is used to identify the determinants of dropout of tribal children. The estimated model is of the form

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10}$$

Here Y =1 if the child discontinues the school
Y = 0 if the child does not discontinue the school
X1 = Father's Education(1 if father is educated and 0 if the father is illiterate)
X2 = Mother's Education(1 if mother is educated and 0 if the mother is illiterate
X3 = Occupational status of father(1 if the father is employed and 0 if the father is unemployed)
X4 = Mother's Occupation(1 if the mother is employed and 0 if the mother is unemployed)
X5 = Cost of education(in rupees)
X6 = Distance(in kilometers)
X7 = Type of family(1 for joint family and 0 for nuclear family)
X8 = Property(in rupees)

Garrets ranking technique

In order to analyse the problems in tribal education, Garrets raking technique was followed. The ranking for the problems given by the respondents is computed into per cent position by using the following formula

$$\text{Per cent position} = \frac{100\ (Rij - 0.5)}{Nj}$$

Where Rij = Rank given for ith variable by the jth respondent;
Nj = Number of variable ranked by the jth respondent.

The per cent position of rank obtained is converted into score by referring to the table given by Henry E. Garrett and R.S. Wood Worth. The score by all respondents for each factor was then added together and divided by the number of respondents experiencing that particular factor. The mean scores of each thus arrived at, were arranged in descending order and the corresponding ranks allotted.

Findings of The Study

Socio-Eeconomic Profile of the Families

The literacy level is determined by size of the family, family income, type of family etc. Hence the current study tried to analyse socio economic profile of the families. Table I represents the socio-economic profile of the selected families.

Table 1 reveals that, there were 330 members in the selected households. Of total members, 26 were representing the age of 0-5, while 56 belonged to the age group of 6-10 and 59 belonged to the age of 11-16. It is evident that 46 per cent of the families were getting the family income of Rs 5000 to Rs 10.000. Of the total families covered 46 per cent belonged to small family and 54 per cent represents large family. It is also clear that 65 per cent of the head of the selected tribal households were illiterate. Of the literate head of the households, 30 per cent have completed primary education.

Stage-wise Enrolment of Tribal Children

Table 2 gives details about the number of students enrolled at various stages.

Table 2 make it evident that only 141 tribal children were enrolled and hence the enrolment rate was estimated to be 81.03 per cent. The poor enrolment might be due to long distance to school or difficulty in medium of instruction. Of total boys, 89 were enrolled and hence boys enrolment rate worked out to be 83.96 per cent. However there were only 52 girls enrolled and girls enrolment rate was 76.47 per cent.

Empirical model of enrolment-Identification of the factors determining enrolment of tribal children

The study tried to identify the determinants of enrolment of tribal children with the help of probit model. The estimated probit coefficients are given in Table 3.

Table 3
Estimated Probit Coefficients of Enrolment of Tribal Children as Related to The Selected Variables

S.No	Variable	Boys			Girls			Overall		
		Co efficient	t value	P>p	Co efficient	t value	P>p	Co efficient	t value	P>p
1.	Constant	-.12	-.95	.34	.04	-1.45	.15	-.03	-1.53	.13
2.	Father's education(X1)	1.20	1.77	.08	1.29	2.24	.03	1.27	2.10	.04
3.	Mother's education(X2)	1.10	0.09	.93	-.89	-.09	.93	1.05	.04	.97
4.	Family size(X3)	2.03	1.72	.09	1.24	.61	.54	1.20	.52	.61
5.	Father's occupation(X4)	-0.22	-2.36*	.02	-.83	-.85	.40	-.27	-1.86	.06
6.	Mother's Occupation(X5)	3.83	2.11*	.04	2.66	.43	.67	2.20	1.16	.25
7.	Type of family(X6)	2.22	1.99	.04	2.46	2.28	.02	2.18	1.95	.05
8.	Landownership(X7)	0.39	-.35	.73	7.23	3.72	.00	7.45	3.67*	.00
9.	Cost of education(X8)	0.99	-0.05	.96	-.95	-1.78	.07	-.95	-1.66	.09
10.	Distance(X9)	-.29	-3.07*	.00	4.12	3.31*	.00	-4.58	3.56*	.00
11.	Earnings(X10)	1.00	1.37	.17	.10	-.61	.54	-.57	-.27	.79

Note: * Statistically significant at 5 per cent level

Source: Calculation based on field survey.

The enrolment of tribal children was significantly affected by father's education, landownership and distance. Against apriori reasoning, earnings has a negative impact though the effect is not statistically significant. The enrolment of boys is positively and significantly influenced by mother's occupation implying that the employed mother realize the value of education and tend to enroll their boys in schools. However, distance has a significant and negative impact on enrolment. For enrolment of girls, the estimated probit coefficients confirm that land ownership and distance to school significantly influence their enrolment.

Stage wise dropout of tribal children

When the students enrolled are not able to complete their study, they drop out from studies and this implies wastage of human resources. Table 4 represents the details about the stage wise drop out of selected tribal children.

Table 4 indicates that of the students enrolled, 71 were dropped out and dropout rate was calculated as 48.94 per cent. The dropout at the secondary level is high as compared to other levels. This might be due to the compulsion of the parents to look after the young siblings or go for work. The comparative analysis of dropout rate of boys and girls reveals that girls dropout rate was higher than that of boys. This might be due to the fact that girls children are retained by the parents to look after their siblings.

Table 4
Stage-wise Dropout of Selected Tribal Children

Stage	Boys	Girls	Total
Primary	11	9	20
Secondary	12	18	30
Higher Secondary	9	5	14
Collegiate	5	2	7
Total	37	34	71

Source: Field survey.

Table 5
Estimated Logistic Regression Coefficients of Dropout of Tribal Children as Related to the Selected Variables

S. no	Variable	Boys					Girls					Overall				
		^ B	S.E	Wald	sig	Exp (B)	^ B	S.E	Wald	sig	Exp (B)	^ B	S.E	Wald	sig	Exp (B)
1.	Constant	1.796	3.13	.329	.57	6.02	3.098	3.13	.980	.32	.045	5.906	3.13	3.560	.06	367.25
2.	Father's education	-1.818	.979	3.45	.06	.162	.153	.722	.045	.83	1.166	.049	.889	.003	.96	1.050
3.	Mother's education	2.132	.909	5.50	.12	8.42	1.478	.751	3.86	.05	4.383	1.628	.922	1.760	.19	5.095
4.	Father's occupation	.054	1.39	.002	.97	1.05	2.583	1.94	1.76	.18	13.23	-2.788	2.10	3.119	.08	1.012
5.	Mother's occupation	.762	1.45	.274	.60	2.14	2.112	1.90	1.23	.27	.121	-3.400	2.11	2.589	.11	.033
6.	Cost of education	.001	.005	.003	.95	1.00	-.001	.004	.018	.89	.999	-.149	.007	.255	.61	.862
7.	Distance	1.193	.576	4.295	.04	3.29	.903	.363	6.19	.01	2.47	.012	.295	3.161	.07	16.256
8.	Type of family	-1.243	.576	4.660	.03	.289	.367	.553	.440	.51	1.443	-1.522	.550	7.665	.00	.218
9.	Property	2.453	.960	6.533	.11	11.6	.123	.643	.037	.85	1.131	-.226	.194	1.366	.24	.797
-2loglikelihood				57.025					73.718					51.303		
Cox and Snell R square				.76					.79					.85		
Nagelkerke R Square				.85					.81					.88		
Overall Per centage				87					85					78		
Chi-square				27.52					17.46					26.25		
Degrees of freedom				8					8					8		
Number of observations				37					34					71		

Source: Calculated figures based on field survey.

Empirical model of dropout-Identification of the factors determining dropout of tribal children

Table 5 gives the estimated logistic regression coefficients of dropout of scheduled tribes as related to selected variables.

For tribal boys, father's education, distance and type of family were the significant factors influencing dropout. However, the dropout of girls is significantly affected by mother's education and distance and they had positive impact. The odd ratio of distance -2.47 indicates that by reducing distance, there is a chance for reducing the dropout by 2.47 per cent. The estimated model for tribal children as a whole reveals that father's occupation, distance and type of family were the significant factors influencing dropout.. The model was able to predict 78 per cent of the cases correctly with the log likelihood ratio of 51.30 and chi square value of 26.25.

Problems in Tribal education

Tribal people face many problems relating to education – inadequate facilities in school, lack of transport facilities, difficult language etc. Table 6 represents Garrets rank for the constraints faced by tribals

Table 6 implies that inadequate facilities is the major problem faced by tribals. The second important constraint faced by them is inconvenient timings. Long distance also poses the difficulty to tribal people.

Recommendations

Based on the findings of the study, the followings measures were recommended to improve the educational status of Scheduled tribes in Nilgiris district.

Table 6

Garrets Rank for the Constraints Faced in Tribal Education

S.No	*Problems*	*Total score*	*Mean score*	*Garrets Rank*
1.	Non-availability of school	5404	54.04	6
2	Long distance	5319	53.19	5
3	Harsh attitude of teachers	5184	51.84	4
4.	Inadequate facilities	5521	55.21	1
5.	Tough syllabus	4069	40.69	9
6.	Inconvenient timings	5625	56.25	2
7.	Unfamiliar language	5528	55.28	3
8.	Inadequate teachers	4692	46.92	7
9.	Difficult language	4426	44.26	8
10.	Sick parents	3714	37.14	10

Source: Calculated figures based on field survey.

- Establishment of secondary and higher secondary schools within easy accessibility;
- Providing regular transport facilities;
- Appointment of adequate number of teachers in the school;
- Motivating all the parents to send the children to school and not to work and
- Creating awareness to the tribal families about the education facilities provided by the Government.

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