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RESEARCH ARTICLE

SOCIO-CULTURAL AND GEO-SPATIAL PREDICTORS AND DISTRIBUTION OF RETENTION PROBLEMS IN SCHEDULED CASTE AND SCHEDULED TRIBE OF NAGRAKATA BLOCK OF JALPAIGURI DISTRICT OF WEST BENGAL

\*<sup>1</sup>Dr. Prasenjit Deb and <sup>2</sup>Mr. Gour Sundar Ghosh

<sup>1</sup>Supervisor and Presently Registrar, University of Kalyani, West Bengal, India  
<sup>2</sup>Jalpaiguri A.C. College and Scholar, University of Kalyani, West Bengal, India

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ABSTRACT

Various organizations of the Globe have launched various schemes and programmes to promote and educate in each and every corner of the world. Education is a fundamental right of human development; hence the present study was conducted on the tea garden parents in Jalpaiguri district of West Bengal. This study analyses the roles, responsibilities and functions of parents in the education of their children and also study the perception of the parents and experiences of the participating children, dropouts and school completers in this education process. For the purpose of the present study, the information/data collected from the sample households based on the parents of dropout children and their opinion towards the present day system of education. The study is an experimental type of study. This study conducted in Jalpaiguri, a Sarva Shiksha Mission (SSM) district of West Bengal since 2002 to evaluate and assess the Socio-Cultural and Geo-Spatial Predictors and distribution of Retention problems in Scheduled Caste and Scheduled Tribe of Nagrakata Block of Jalpaiguri District of West Bengal. To identify the effects, we use structured schedule containing sixteen independent variables viz. Age of Father (X<sub>1</sub>), Age of Mother (X<sub>2</sub>), Father's Education (X<sub>3</sub>), Mother's Education (X<sub>4</sub>), Father's Occupation (X<sub>5</sub>), Mother's Occupation (X<sub>6</sub>), Family Size (X<sub>7</sub>), Monthly approx. income (X<sub>8</sub>), Home environment (X<sub>9</sub>), Climatic Factor (X<sub>10</sub>), Expenditure (monthly) on Education (X<sub>11</sub>), Attitude towards Education (X<sub>12</sub>), Financial Condition (X<sub>13</sub>), Social Interaction (X<sub>14</sub>), Role of forest/tea garden in controlling financial hardship (X<sub>15</sub>) and Use of Mass media (X<sub>16</sub>), against dependent variable Level of Retentivity (Y).

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INTRODUCTION

Education plays an important role in building of the Nation and is an instrument in bringing about a change in the society as a whole. For quality improvement in education for mass, every citizen has to be covered, without any disparity between the haves and the have-nots, the rural and the urban, the linguistic and geographical regions and more importantly between the genders. Although the number of schools has increased since independence, the number of dropouts at the end of schooling is still quite high. If illiteracy has to be eliminated, the school drop-out rate has to be minimized and quality education has to be imparted, then correspondingly the No. of schools and teachers has to be increased multifold. The constitution of India was framed in 1950 with an objective to guarantee social, political and economic justice to all irrespective of caste, creed and religion. It was well visualized that, development in education along with other allied sectors would play a vital role in bringing about desirable changes in the country.

It was planned that the backward sections of the Indian population i.e. Scheduled Castes and Scheduled Tribes and other backward classes must be provided opportunity in education to develop critical thinking and self determination and contribute to the progress of the country. These promises laid the foundation for the attempt of Universalization of Primary Education in India. In 1950, target was set to universalize primary education among the entire eligible category of children within the age group of 6-14 years of age within a span of 10 years. During that period a great deal of expansion in education facilities was achieved. However, universalization was still a distant dream.

Parental attitude is a measure or an index of parental involvement. A child, brought up with affection and care in the least restrictive environment would be able to survive better with the prospected world. Therefore, the family shapes the social integration of the child more than a formal school. **Turnbull (1983)** has identified four basic parental roles- parents as educational decision makers; parents as parents; parents as teachers and parents as advocates. Since the parent's attitude is so important, it is essential that the home and school

\*Corresponding author: Dr. Prasenjit Deb,  
Supervisor and Presently Registrar, University of Kalyani, West Bengal, India.

work closely together, especially for children with disabilities. (Turnbull, 1983) **The Warnock Report (1978)** stresses the importance of parents being partners in the education of their children. The role of parents should actively support and enrich the educational processes. (Warnock, 1978) **Korth (1981)** states that parents should be recognized as the major teacher of their children and the professional should be considered consultants to parents (Korth, 1981). **Tait (1972)** opines that the parents' psychological well-being and the ease or difficulties with which they decipher the cues that facilitate the socialization process influence the personal and social development of the child. It is the parents who exert the major influence on the development of the child from birth to maturity (Tait, 1972). One of the most important attributes of parental attitude is consistency. As children mature into adolescence, family involvement in their learning remains important. Family involvement practices at home and at school have been found to influence secondary school students' academic achievement, school attendance, and graduation and college matriculation rates (Dornbusch and Ritter, 1988; Plank and Jordan, 1997). Despite its importance, however, families' active involvement in their children's education declines as they progress from elementary school to middle and high school (Dauber and Epstein, 1993; Lee, 1994). Research suggests that schools can reverse the decline in parent involvement by developing comprehensive programs of partnership (Eccles and Harold, 1993; Epstein and Connors, 1994). These researches show that family involvement helps for achieving higher attendance, better grade point averages and lower dropout rates.

Family involvement is the strongest predictor of child educational outcomes. This dimension associated significantly with children's motivation to learn, attention, task persistence, receptive vocabulary skills, and low conduct problems. Family involvement in education has been identified as a beneficial factor in young children's learning (National Research Council [NRC], 2001; U.S. Department of Education, 2000). It is, therefore, a key component of national educational policies and early childhood programs. Much of the research on parent involvement, as it relates to children's outcomes, has emphasized the relationship between specific parent involvement behaviors and children's achievement. Parental involvement at school (e.g., with school activities, direct communication with teachers and administrators) is associated with greater achievement in mathematics and reading (Griffith, 1996; Reynolds, 1992; Sui-Chu and Willms, 1996). Higher levels of parent involvement in their children's educational experiences at home (e.g., supervision and monitoring, daily conversations about school) have been associated with children's higher achievement scores in reading and writing, as well as higher report card grades (Epstein, 1991; Griffith, 1996; Sui-Chu and Willms, 1996; Keith *et al.*, 1998). Other research has shown that parental beliefs and expectations about their children's learning are strongly related to children's beliefs about their own competencies, as well as their achievement (Galper *et al.*, 1997). Parents who evidenced high levels of school contact (volunteering in the classroom, participating in educational workshops, attending Policy Council meetings) had children who demonstrated greater social competency than children of parents with lower levels of

school contact (Parker *et al.*, 1997). It was hypothesized that home-based involvement would be most strongly associated with positive classroom learning outcomes and that direct school-based involvement would predict lower levels of conduct problems. Home-Based Involvement activities, such as reading to a child at home, providing a place for educational activities, and asking a child about school, evidenced the strongest relationships to later preschool classroom competencies. These activities were related to children's approaches to learning, especially motivation and attention/persistence, and were found to relate positively to receptive vocabulary.

The attitude of the parents signifies that the supporting nature of family in their children's education. The parental attitude can be negative or positive. The negative attitude of the parents regarding education and schooling can prevent their children from getting education. With less parental support in school work, low level of motivation and poor self-esteem of children can result. Positive attitude of the parents can be beneficial to their children in many cases and can be reflected in improvement in class performance, creating interest among children to learn, and higher achievement scores both in reading, writing and arithmetic skill.

The growing awareness concerning education makes many families' value about their children's education and act favorably towards schooling and education of their children. They become a part of the decision making process of school, and decide their children's future regarding higher education. Therefore, it is imperative to assess the degree of favorableness of attitude in tribal communities so as to estimate the success of awareness programmes and endeavors with regard to "Sarva Shiksha Mission" or universal elementary education.

### Significance of the Study

Parents take part in a very central role in every family. They are nucleus centering round in which the entire family revolves. Women plays the role as a mother, as a wage earning member, manager of the family and in keeping contact with the society. It is a fact that women can only educate the family because home is the first place to learn.

### Review of Literature and Theoretical Framework

**Bogunović Blanka and Polovina Nada (2007)** found in a study that the family stimulation is the resultant of the influence of cultural and educational profile of the family and active parental attitudes regarding education and attainment of their children. They examined the students' attitudes towards schooling, and to obtain answers to the question: which stimulating aspects of family context are the most predictable for the development of educational aspirations, i.e. attitudes towards school and gaining knowledge, educational interests and plans for further education. The sample consisted of 1.464 eighth-grade sample students, aged 15, from 34 primary schools in Serbia. The data were collected by the use of questionnaires filled in by the students and school principals. The results indicated a trend of interrelatedness of cognitively and educationally favorable conditions within the family and positive attitudes towards school, attainment, high aspirations

and cognitive and intellectual interests for out-of-school activities (Bogunović Blanka and Polovina Nada, 2007). Huisman, Rani, and Smits, (2009) studied the role of socio-economic and cultural factors, and of characteristics of the educational infrastructure on primary school enrolment. The sample constituted 70,000 children living in 439 districts of 26 states of India. The results indicated that most of the variation in educational enrolment (around 70%) is explained by factors at the household level, of which socio-economic factors are most important. And the result also indicated that, in the cities schooling decisions are hardly influenced by supply-side factors. In rural areas, however, these factors do play an important role. If there are fewer schools or teachers, or if the local culture is more patriarchal, rural children (in particular girls) participate substantially less. The major finding of this respect was that in rural areas inequalities between socio-economic status groups are lower if more schools and teachers are available (Huisman and Smits, 2009).

Breen and Goldthorpe, (1997), (Breen and Goldthorpe, 1997) in a study, found that household wealth, the educational level and labour market position of the parents is expected to play a major role in deciding the educational level of the child. There is ample evidence that children from better educated parents more often go to school and tend to drop out less (UNESCO, (2010); Huisman and Smits, (2009); Buchmann and Brakewood, (2000); Shavit and Blossfeld 1993). Parents who have reached a certain educational level might want their children to achieve at least that level. For educational enrolment of girls, education of the mother might be especially important. Mothers who have succeeded in completing a certain level of education have experienced its value and know that it is within the reach of girls to complete that level. Therefore, we expect them to use the power and insights derived from their higher education to make sure that their daughters are educated too. It has been emphasized that (Bhalotra and Heady (2003); Basu, Das and Dutta, (2003) that fathers who are in salaried employment are more likely to be aware of the importance of education and hence to invest more in their children's education. The children themselves may also be more aware of the benefits of education. On the other hand, parents are less likely to invest in their children's education when direct occupational transmission or transference of capital is a viable option to obtain a good position in society for their children. Hence farmers and business owners may feel less need to invest in their children's education than people in dependent employment. Also, for small farmers the opportunity costs of sending their children to school may be high, since they are more likely to expect their children to help out tending the land and rearing livestock, especially during peak working times.

From the above discussion, it is evident that the parents' positive attitude towards child's education is important in determining school attendance and academic achievement of the child. Favourable attitude towards schooling and education enhances parental involvement in children's present and future studies. Parent's attitude towards their children's education is affected adversely by low socio-economic status and since the tribal constitute the disadvantaged population, it is expected that the attitude of parents of tribal children will be

unfavourable towards education. However, the present study aims to examine whether the tribal parents, today, exhibit a positive and favourable attitude towards their children's education as a result of increasing awareness of values of education through Government endeavours and initiatives. If the results indicate favourable attitude of the parents in tribal population, it is indicative of success of these endeavours as well as better future of the disadvantaged children.

### Objectives of the Study

The study broadly examines the attitude of the parents towards education in Dooars households of West Bengal largely consisting of tribal population. The specific objectives are as under:

1. To examine the attitudes of parents towards schooling and education of their children;
2. To compare the parents belonging to tribal and non-tribal communities with regard to their attitude towards children's schooling and education;
3. To examine whether there exists a significant gender difference in attitudes of parents towards children's education;
4. To examine the future planning and aspirations of the parents with regard to their child's education;
5. To examine the socio-economic status and educational background of the parents affects the education of their children;
6. To examine the role of parents' socio-economic and educational background on the Educational process of their children;
7. To analyze the Socio-Cultural & Geo-Spatial Predictors and distribution of Retention problems;
8. To study the nature of parental involvement in schools;
9. To Analyze the extent of parental involvement in schools;
10. To Examine the areas of cooperation between parents and teachers;
11. To Identify parent and teacher perception of this cooperation.
12. To assess the socio-personal and attitudinal casual variables viz. Age of Father ( $X_1$ ), Age of Mother ( $X_2$ ), Father's Education ( $X_3$ ), Mother's Education ( $X_4$ ), Father's Occupation ( $X_5$ ), Mother's Occupation ( $X_6$ ), Family Size ( $X_7$ ), Monthly approx. income ( $X_8$ ), Home environment( $X_9$ ), Climatic Factor ( $X_{10}$ ), Expenditure (monthly) on Education ( $X_{11}$ ), Attitude towards Education ( $X_{12}$ ), Financial Condition ( $X_{13}$ ), Social Interaction ( $X_{14}$ ), Role of forest/tea garden in controlling financial hardship ( $X_{15}$ ) and Use of Mass media ( $X_{16}$ ).

### Limitation of the Study

The study was limited to Jalpaiguri district only.

### Delimitation of the Study

The study was delimited only to the tribal parents working in the tea gardens of Jalpaiguri district only.

## Research Questions

The research purpose of exploring parents' attitudes has immense justifications. It was necessary to focus the study on research objectives and concentrate to get the understanding of parents in this regard. To get the comprehension of attitudes of tribal parents toward their children's elementary education, the study attempted to answer the following research questions.

- i. How do tribal parents define the significance of child education?
- ii. What type of role, tribal parents wish to contribute for their child education?
- iii. What type of responsibility, tribal parents are contributing for their child education?
- iv. What could be plausible measures to enhance parents' task for retention of their children's education?
- v. To what extent will tribal parental attitudes toward primary education influence their willingness to allow their children take elementary education as a career?

## The Study Area and Methodology

The present study is based on intensive house hold survey conducted during October, 2014 – January 2015, in one block of the district of Jalpaiguri of the State of West Bengal. The block (Panchayat Samiti), namely Nagrakata was selected at random, out of 13 blocks in the district. With the help of random sampling method 100 school teachers were selected from 5 Gram Panchayat (GP) viz. Sulkapara, Champaguri, Looksan, Angrabhasa-I, Angrabhasa-II of the Nagrakata block. During selection of parents, again random sampling was required to choose the children where retention in education is the acute problem. A structured schedule containing 32 different questions / statements / views / opinion were placed before each respondent parent separately to measure educational standard, occupation expenditure, attitude towards education, use of mass media and casus of dropout. Here, in order to explore the problem, different statistical methods like Correlation, Multiple Regression Analysis, Step-down Regression, Discriminant Analysis and Factor Analysis have been adopted.

## RESULTS AND DISCUSSION

Table 1 presents the correlation studies between the dependent variable i.e. Level of Retentivity (Y) and other sixteen (16) independent variables viz. Age of Father (X<sub>1</sub>), Age of Mother (X<sub>2</sub>), Father's Education (X<sub>3</sub>), Mother's Education (X<sub>4</sub>), Father's Occupation (X<sub>5</sub>), Mother's Occupation (X<sub>6</sub>), Family Size (X<sub>7</sub>), Monthly approx. income (X<sub>8</sub>), Home environment(X<sub>9</sub>), Climatic Factor (X<sub>10</sub>), Expenditure (monthly) on Education (X<sub>11</sub>), Attitude towards Education (X<sub>12</sub>), Financial Condition (X<sub>13</sub>), Social Interaction (X<sub>14</sub>), Role of forest/tea garden in controlling financial hardship (X<sub>15</sub>) and Use of Mass media (X<sub>16</sub>). It is found that variables like , Father's Education (X<sub>3</sub>) Climatic Factor (X<sub>10</sub>), Expenditure (monthly) on Education (X<sub>11</sub>), Financial Condition (X<sub>13</sub>), Role of forest/tea garden in controlling financial hardship (X<sub>15</sub>) had wielded a substantial influence on the dependent variable that is, Level of Retentivity.

Father's Education plays a key role in the family. It is the father in the parental family who ultimately decides the educational future of his children. Higher education of Father imparts better congenial educational environment in home which helps the children for their educational growth. It reduces the chances of dropout and increases the level of retentivity. Higher education of father means that children may get the educational support from home in understanding text books. So the variable Father's Education (X<sub>3</sub>) has the positive significance on the dependent variable.

Climatic Factor (X<sub>10</sub>) in the Dooars region is another important factor for the school going children. It temperatures fluctuate a lot during summer and winter. In rainy season, the rate of rain fall is comparatively higher in this region. It affects the education in an adverse manner. Extreme temperature during summer or excessive fall in temperature during winter or higher rain fall during rainy season impart a strong negative bearing on the retentivity level of students. Expenditure (monthly) on Education (X<sub>11</sub>) indicates the additional financial support that a student may get from their home.

Table 1. Coefficient of Correlation between Y and other 16 Independent Variables

<u>S. No.</u>	<u>Variables</u>	<u>"r" value</u>
X <sub>1</sub>	Age of Father	-.1155
X <sub>2</sub>	Age of Mother	0.0389
X <sub>3</sub>	<b>Father's Education</b>	<b>0.2054*</b>
X <sub>4</sub>	Mother's Education	-.0809
X <sub>5</sub>	Father's Occupation	0.0475
X <sub>6</sub>	Mother's Occupation	-.1255
X <sub>7</sub>	Family Size	-.1247
X <sub>8</sub>	Monthly approx. income	-.1496
X <sub>9</sub>	Home environment	-.1297
X <sub>10</sub>	<b>Climatic Factor</b>	<b>-.2159**</b>
X <sub>11</sub>	<b>Expenditure (monthly) on Education</b>	<b>0.2053*</b>
X <sub>12</sub>	Attitude towards Education	-.0123
X <sub>13</sub>	<b>Financial Condition</b>	<b>0.2085*</b>
X <sub>14</sub>	Social Interaction	-.0776
X <sub>15</sub>	<b>Role of forest/tea garden in controlling financial hardship</b>	<b>0.2496**</b>
X <sub>16</sub>	Use of Mass media	-.0945

Critical value (1-Tail, .05) = +or- .1808 \*Significant at 5% level  
 Critical value (2-Tail, .01) = +or- .2146 \*\* Significant at 1% level



Up to elementary level, the text books are free for all except general class boys. Still in purchasing reference books, pen, pencil, note books, and other accessories, additional financial help is required from home. So this consequent variable has the positive impact on the predictor variable.

Financial Condition ( $X_{13}$ ) will affect the whole family. Better financial condition means the family is not suffered with the problems of bread and butter. It helps in providing additional financial support towards educations of the children. Here, the variable like  $X_{13}$  has positive bearing on the retentivity level of the children.

Forest/tea garden in Dooars region makes the provision of additional income towards family and it can control their financial hardship which ultimately leads the parents to give support for the continuity of education of their children. So the variable like Role of forest/tea garden in controlling financial hardship ( $X_{15}$ ) shows its strong positive impact on the level of retentivity.

understand the problems and prospects and guide the children in a better way. Thus, the variable like Age of Mother ( $X_2$ ) has the positive regression effect on the Level of Retentivity. Again, the social interactions of the parents indirectly help them in understanding the problems of retention. Social interactions of parents with the parents of other children and with the people of the society facilitate them to cooperate with their children and teachers of the school to acquire all round development of their children.

It is also to be mentioned that all sixteen variables put together can explain 37.957 per cent ( $R^2 = 0.37957$ ) of the total effect. This demands inclusion of more variables and exclusion of less significant variables as well as more number of respondents for being studied across the heterogeneous micro situations to generate higher levels of explicability.

**Table 2. The Multiple Regression Analysis**

<u>S. No.</u>	<u>Variables</u>	<u>"β" value</u>	<u>"t" value</u>
X <sub>1</sub>	Age of Father	-0.141882	-1.118
X <sub>2</sub>	Age of Mother	0.405631	2.777**
X <sub>3</sub>	Father's Education	0.263055	2.824**
X <sub>4</sub>	Mother's Education	-0.179194	-1.799
X <sub>5</sub>	Father's Occupation	-0.009679	-0.071
X <sub>6</sub>	Mother's Occupation	-0.038424	-0.319
X <sub>7</sub>	Family Size	0.005875	0.034
X <sub>8</sub>	Monthly approx. income	-0.415669	-2.035*
X <sub>9</sub>	Home environment,	-0.196428	-1.402
X <sub>10</sub>	Climatic Factor	-0.136710	-1.100
X <sub>11</sub>	Expenditure (monthly) on Education	0.450460	3.208**
X <sub>12</sub>	Attitude towards Education	0.060790	0.599
X <sub>13</sub>	Financial Condition	0.068138	0.493
X <sub>14</sub>	Social Interaction	0.389092	2.621**
X <sub>15</sub>	Role of forest/tea garden in controlling financial hardship	0.305817	2.999**
X <sub>16</sub>	Use of Mass media	-0.058737	-0.412

Multiple R = 0.61609  
 R Square = 0.37957  
 Adjusted R<sup>2</sup> = 0.25701  
 Standard Error = 0.39931

**Analysis of Variance**

	DF	Sum of Squares	Mean Square
Regression	16	7.90121	0.49383
Residual	81	12.91512	0.15945

Table 2 presents the multiple regression analysis with  $\beta$  values and corresponding t values. It is discernible that the variables like Age of Mother ( $X_2$ ), Father's Education ( $X_3$ ), Monthly approx. income ( $X_8$ ), Expenditure (monthly) on Education ( $X_{11}$ ), Social Interaction ( $X_{14}$ ), and Role of forest/tea garden in controlling financial hardship ( $X_{15}$ ) have been found to exercise significant regression effect on the level of retentivity. It has been found that the different factors affecting the level of retentivity. In Dooars region, especially in tribal section locale, early marriages occur. In their early age, mother cannot realize the problems of the children facing in school or home in continuing their education. In the later age, they are able to

From placing the variables into a step down model of regression analysis, it is found that after step 3, three variables viz. Father's Education ( $X_3$ ), Expenditure (monthly) on Education ( $X_{11}$ ), and Role of forest/tea garden in controlling financial hardship ( $X_{15}$ ) had summatedly explained only 15.37 per cent of the total effect.

Thus, rest 13 variables were explaining only about 22.58 per cent of total effect. It is interesting to note that in the step down model, role of father had come up innovatively to characterize the agglomerated effect of these 16 variables on the level of retentivity.

**Table 3. Step-down Regression Analysis**

Variable(s) Entered on Step Number 1. X<sub>15</sub>  
 Multiple R = 0.26270  
 R Square = 0.06901  
 Adjusted R<sup>2</sup> = 0.05931  
 Standard Error = 0.44930

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	1.43652	1.43652
Residual	96	19.37981	0.20187

F = 7.11595 Signif F = 0.0090

Variable(s) Entered on Step Number 2. X<sub>3</sub>

Multiple R = 0.33133  
 R Square = 0.10978  
 Adjusted R<sup>2</sup> = 0.09104  
 Standard Error = 0.44166

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	2.28523	1.14262
Residual	95	18.53109	0.19506

F = 5.85765 Signif F = 0.0040

Variable(s) Entered on Step Number 3. X<sub>11</sub>

Multiple R = 0.39212  
 R Square = 0.15376  
 Adjusted R<sup>2</sup> = 0.12675  
 Standard Error = 0.43290

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	3	3.20075	1.06692
Residual	94	17.61558	0.18740

F = 5.69327 Signif F = 0.0013

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
X <sub>3</sub>	0.034897	0.015578	0.212880	2.240	0.0274
X <sub>11</sub>	0.002273	0.001029	0.210013	2.210	0.0295
X <sub>15</sub>	0.283236	0.105088	0.255806	2.695	0.0083
(Constant)	0.997525	0.102949		9.690	0.0000

**Table 4. Discriminant Analysis**

On groups defined by Y

Number of cases by

Y	Number of cases	
	Unweighted	Weighted Label
1	68	68.0
2	30	30.0
Total	98	98.0

----- Variables in the Analysis after Step 3 -----

Variable	Tolerance	F to Remove	D Squared	Between Groups
X <sub>3</sub>	0.9888988	5.0180	0.5617775	1 2
X <sub>11</sub>	0.9881771	4.8854	0.5687176	1 2
X <sub>15</sub>	0.9964662	7.2643	0.4470174	1 2

**Summary Table**

Step Entered	Action	Vars	Wilks' Lambda	Minimum Sig.	D Squared	Sig.	Between Groups
1	X <sub>15</sub>	1	0.93099	0.0090	0.34184	0.0090	1 2
2	X <sub>3</sub>	2	0.89022	0.0040	0.56872	0.0040	1 2
3	X <sub>11</sub>	3	0.84624	0.0013	0.83796	0.0013	1 2

Hence, the Discriminatory Analysis has appropriately isolated the variables like Role of forest/tea garden in controlling financial hardship (X<sub>15</sub>), Father’s Education (X<sub>3</sub>), and Expenditure (monthly) on Education (X<sub>11</sub>), for possessing discriminatory potentials in differentiating between high and low level of retentivity among the students at the elementary level (class I-VIII).

**Table 5. Factor Analysis**

Analysis number 1 List wise deletion of cases with missing values  
Extraction 1 for analysis 1, Principal Components Analysis (PC)  
Initial Statistics:

Variable	Communality	Factor	Eigen value	Pct of Var	Cum Pct
X <sub>1</sub>	1.00000	1	4.44524	27.8	27.8
X <sub>2</sub>	1.00000	2	2.54592	15.9	43.7
X <sub>3</sub>	1.00000	3	1.60123	10.0	53.7
X <sub>4</sub>	1.00000	4	1.23666	7.7	61.4
X <sub>5</sub>	1.00000	5	1.15346	7.2	68.6
X <sub>6</sub>	1.00000	6	0.90480	5.7	74.3
X <sub>7</sub>	1.00000	7	0.80635	5.0	79.3
X <sub>8</sub>	1.00000	8	0.61126	3.8	83.2
X <sub>9</sub>	1.00000	9	0.57298	3.6	86.7
X <sub>10</sub>	1.00000	10	0.48324	3.0	89.8
X <sub>11</sub>	1.00000	11	0.47655	3.0	92.7
X <sub>12</sub>	1.00000	12	0.32404	2.0	94.8
X <sub>13</sub>	1.00000	13	0.27001	1.7	96.4
X <sub>14</sub>	1.00000	14	0.26212	1.6	98.1
X <sub>15</sub>	1.00000	15	0.21348	1.3	99.4
X <sub>16</sub>	1.00000	16	0.09265	0.6	100.0

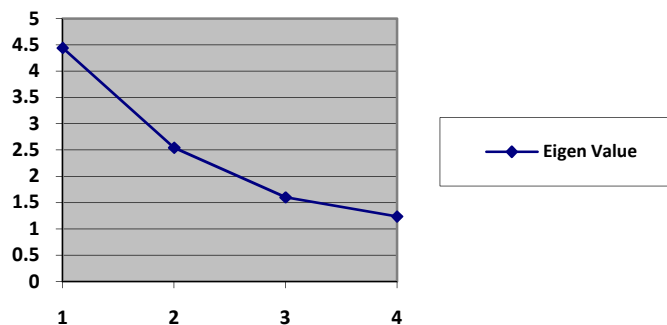
Principal Components Analysis (PC) extracted 4 factors.

Factor Matrix:

	Factor 1	Factor 2	Factor 3	Factor 4
X <sub>1</sub>	0.61073	-.16213	-.20487	-.26890
X <sub>2</sub>	0.73997	-.35498	-.18349	-.14235
X <sub>3</sub>	0.12774	0.10372	-.16354	-.17350
X <sub>4</sub>	0.09345	0.20481	-.51617	0.30253
X <sub>5</sub>	0.26544	0.70855	-.25025	0.22864
X <sub>6</sub>	0.61455	0.01494	0.46206	0.06552
X <sub>7</sub>	0.80299	-.15473	-.19752	-.16170
X <sub>8</sub>	0.82277	0.07320	0.33210	0.15537
X <sub>9</sub>	0.64936	0.35747	0.31984	-.02080
X <sub>10</sub>	0.01397	-.73911	0.37121	0.10460
X <sub>11</sub>	-.29069	0.43539	0.64289	0.20085
X <sub>12</sub>	0.06559	-.05882	-.28156	0.82481
X <sub>13</sub>	-.02678	0.79412	0.13774	-.15950
X <sub>14</sub>	0.78122	-.06413	-.04098	0.10925
X <sub>15</sub>	0.03659	0.51655	-.22740	-.35816
X <sub>16</sub>	0.77894	0.20174	0.04411	0.13392

Variable	Communality	Factor	Eigen value	Pct of Var	Cum Pct
X <sub>1</sub>	0.51355	1	4.44524	27.8	27.8
X <sub>2</sub>	0.72750	2	2.54592	15.9	43.7
X <sub>3</sub>	0.08392	3	1.60123	10.0	53.7
X <sub>4</sub>	0.40863	4	1.23666	7.7	61.4
X <sub>5</sub>	0.68741				
X <sub>6</sub>	0.59569				
X <sub>7</sub>	0.73389				
X <sub>8</sub>	0.81674				
X <sub>9</sub>	0.65218				
X <sub>10</sub>	0.69521				
X <sub>11</sub>	0.72771				
X <sub>12</sub>	0.76734				
X <sub>13</sub>	0.67576				
X <sub>14</sub>	0.62803				
X <sub>15</sub>	0.44815				
X <sub>16</sub>	0.66733				

Factor Analysis is used here to detect the reduced number of variables according to their level of significance. Principal Component Analysis extracted four factors. Here, the variables like Age of Father (X<sub>1</sub>), Age of Mother (X<sub>2</sub>), Father’s Education (X<sub>3</sub>), and Mother’s Education (X<sub>4</sub>) were found significant with Eigen values 4.44524, 2.54592, 1.60123, and 1.23666 respectively. The percentages of variance of these four variables are 27.8 per cent, 15.9 per cent, 10.0 per cent, and 7.7 per cent respectively. The graph below shows the variation of Eigen value with variable number.



**Variation of Eigen value with Variable Number**

**Conclusion and Suggestions**

The district Jalpaiguri has its special character in terms of geographical arena. One side of the district is the flat surface area where the level of literacy is comparatively higher in respect of the available basic amenities and the other side is Dooars region where the literacy level is comparatively lower. These are the sub-Himalayan area where geo-cultural and geo-spatial factors play the important role in day to day life. In these tribal dominated region, some identified casual variables like Age of Mother (X<sub>2</sub>), Father’s Education (X<sub>3</sub>), Monthly approx. income (X<sub>8</sub>), Climatic Factor (X<sub>10</sub>), Expenditure (monthly) on Education (X<sub>11</sub>), Financial Condition (X<sub>13</sub>), Social Interaction (X<sub>14</sub>), and Role of forest/tea garden in controlling financial hardship (X<sub>15</sub>) had found their substantial impact on the level of retentivity of students at the elementary level which is a big challenge even in twenty first century. The result of the study suggests that some more variables to be included with the exclusion of some less significant variables so that the future research in this field may explain more variations towards addressing the issues like problems of retention.

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