

Analysing the Influence of Caste, Gender, Religion, and Household Characteristics on Enrolment Status and Student Dropout in Assam: A Logistic Regression Study

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Abstract:

This study investigates the factors contributing to enrolment status and dropout rates in Assam using a binomial logistic regression model. The dependent variable, enrolment status, is categorized into currently enrolled and dropout or no enrolment. Explanatory variables encompass religion, gender, social group, sex of the head of the household, household head's education level, family income, and household size.

Our objectives include assessing the influence of religion, gender, social group, household leadership, head's education level, family income, and household size on enrolment and dropout likelihood. Dummy variables are used for religious affiliations, social group categories, head's education, and family income groups.

The results reveal significant associations between gender, education level of the head of the household, and family income with enrolment and dropout likelihood. Muslims exhibit a higher likelihood of dropout or no enrolment compared to Hindus. Female-headed households and individuals in households with higher-educated heads display increased odds of no enrolment or dropout. Lower family income levels are associated with higher odds of dropout.

Keywords: Enrolment Status, Student Dropout, Logistic Regression, and National Sample Survey (NSS)

1. Introduction

In today's globalized world, education is universally recognized as a fundamental human right, playing a pivotal role in individual development, societal progress, and economic growth (Zendeli, 2017). This perspective highlights the profound impact that education can have on the lives of individuals and the prosperity of entire nations. Ensuring that every individual has access to a high-quality education is not only a moral imperative but also a global necessity. Nevertheless, it is evident that significant challenges persist in various regions worldwide, resulting in disparities in enrolment and dropout rates among different demographic and socio-economic groups. These disparities serve as stark reminders of the work that remains to be done in our pursuit of educational equity and access for all (Smith, 2020).

Within the landscape of education, the issue of student dropout rates has endured as a persistent and concerning problem. It poses substantial challenges to educational institutions, policymakers, and society at large. While it is undeniable that access to education has significantly expanded over the years, the fact that high dropout rates continue to plague our educational systems raises critical questions about the effectiveness and inclusivity of these systems. It is incumbent upon us to delve into the underlying reasons behind student dropout rates to craft effective interventions and policies aimed at reducing these rates. By doing so, we can ensure that every student is provided with a fair chance to complete their education and unlock their full potential.

With these pressing concerns in mind, the present paper sets out to provide a comprehensive analysis of the factors contributing to student dropout in Assam, India. This analysis explores a wide range of factors, both individual and systemic, that play a role in this complex phenomenon. In particular, our study focuses on the impact of caste, gender, religion, and other socio-economic factors on student enrolment and dropout rates in Assam. This comprehensive examination is vital for gaining a deeper understanding of the challenges faced by different groups of students in Assam's education system.

To accomplish this, our study utilizes unit-level data from the National Sample Survey (NSS), a valuable dataset that encompasses a wide range of socio-economic and demographic information. By conducting a rigorous analysis of this data, we aim to shed light on the unique challenges and opportunities within the education sector in Assam. Our findings provide insights that can inform the development of targeted policies and interventions, ultimately working towards a more equitable and accessible education system for all residents of Assam.

2. Objectives and Research Questions:

The primary objectives of this research are as follows:

- a) To comprehensively analyse the enrolment status distribution among different caste and religious groups in Assam.
- b) To thoroughly examine the enrolment patterns and dropout rates among students, categorized by caste and religion in Assam.
- c) To investigate the underlying causes of non-enrolment and student dropout at various educational stages within Assam.
- d) To identify, assess, and analyse both individual and systemic factors that play a pivotal role in influencing student dropout rates in Assam, with specific emphasis on caste, gender, religion, and socio-economic factors.

Based on the above objectives, the research questions to be addressed are as follows:

- A. What is the relationship between caste and religion and the enrolment status of students in Assam, and how does this pattern vary across different demographic groups?
- B. What are the factors contributing to student dropout rates in Assam, with a specific focus on caste, gender, religion, and socio-economic factors, and how do these factors interact to influence dropout rates?

3. Methodology

3.1 Data Collection

The study is grounded in unit-level data from the 75th Round of the National Sample Survey (NSS) on Household Social Consumption on Education in India¹. The central sample for this study encompasses 113,757

¹Government of India (2019). Household Social Consumption on Education in India NSS 75th Round (JULY 2017 – JUNE 2018). Ministry of Statistics and Programme Implementation. National Sample Survey Office. Available at <https://microdata.gov.in/nada43/index.php/catalog/151>

sample households, distributed as 64,519 in rural areas and 49,238 in urban areas. The total number of individuals included in this study amounted to 513,366 persons, with 286,456 residing in rural areas and 207,462 in urban areas. Among these individuals, those falling within the age range of 3 to 35 years constituted the central sample, numbering 286,456 persons, of which 173,397 were in rural areas and 113,059 in urban areas (Government of India, 2019).

From this central sample of households, we extracted a subset pertaining specifically to Assam, comprising 3,744 households, with 2,688 situated in rural areas and 1,056 in urban areas. Within this subset, the study focuses on individuals between the ages of 3 to 35 years, totalling 9,804 persons, with 7,526 residing in rural areas and 2,278 in urban areas.

3.2 Analytical Framework:

The analysis has been carried out using a combination of descriptive statistics and advanced statistical techniques of logistic regression, and data visualization. The analysis will be stratified by caste, gender, religion, and other relevant variables to understand disparities comprehensively.

To examine the factors contributing to dropout rates and current enrolment status, a binomial logistic regression model has been employed. The dependent variable in our case is the status of enrolment. The explanatory variables include religion, gender, social group, sex of the head of the household, household Head's education level, family income and household size. As the dependent variable is categorical in nature, there are two options- individuals with currently enrolled and individuals with dropout or no enrolment; the Ordinary Least Squares (OLS) regression technique will not be applicable. Therefore, we used a binary logistic regression technique for our analysis. In our case the dependent variable is binary outcome coded as 0 and 1. Individuals with dropout or no enrolment are assigned with 1, while individuals with currently enrolled are assigned with 0. Among the explanatory variables we have both numerical variables as well as categorical variables. The functional form of the relationship is:

Enrolment status = $f(\text{Religion, Gender, Social Group, Sex of Head, Head's Education, family Income, Household Size})$

Here, numerical variable includes household size (HS). Binary coding has been used for two variables namely, the gender of the respondent (male=0; female=1) and sex of the head of the respondent (male=0; female=1). We have used dummy variables regarding religious affiliations, social group categories, head's education and family income groups. The dummy structures for these four characters are as below:

For religion, considering Hindus as the reference group, Drel1 refers to Muslim=1, 0 otherwise; Drel2 refers to Christians=1, 0 otherwise; and Drel3 refers to Others=1, 0 otherwise.

Similarly, for social group categories, considering STs as the reference group, Dsg1 refers to SCs=1, 0 otherwise; Dsg2 refers to OBCs=1, 0 otherwise; and Dsg3 refers to Others=1, 0 otherwise.

For head's education, considering "No literate" as the reference category, Dhedu1 refers to "Literate without schooling"=1, 0 otherwise; Dhedu2 refers to "Below primary"=1, 0 otherwise; Dhedu3 refers to "primary"=1, 0 otherwise; Dhedu4 refers to "Secondary"=1, 0 otherwise; Dhedu5 refers to "Higher secondary"=1, 0 otherwise; Dhedu6 refers to "Graduate"=1, 0 otherwise; and Dhedu7 refers to "Post Graduation and above" =1, 0 otherwise.

Finally, for family income, considering below 5000 as the reference group, Dhi1 refers to "Family income 5000 to less than 20000" =1, 0 otherwise; Dhi2 refers to "Family income 20000 to less than 35000" =1, 0 otherwise; Dhi3 refers to "Family income 35000 to less than 50000" =1, 0 otherwise; and Dhi4 refers to "Family income 50000 and above" =1, 0 otherwise.

By employing a binomial logistic regression model, this study aims to assess the individual and combined effects of these factors on the likelihood of an individual either being enrolled in education or having dropped out in the specified study area.

Model specification:

Let,

Y_{ij} denotes the category of enrolment status of the respondents,

Where, i : indexed for individual respondent

j : indexed for categories of enrolment status. j takes values 0 and 1 for currently enrolled and no enrolment or dropout.

Thus, Y_{ij} is the i^{th} individual fall in the j^{th} category.

Now,

$\pi_{i1} = \Pr(Y_{i1} = 1)$ is the probability that i^{th} individual has no enrolment or dropout.

Thus, the model for odds ratio in favour of no enrolment or dropout is as follows:

$$\frac{\pi_{i1}}{1-\pi_{i1}} = \frac{1+e^{Z_i}}{1+e^{-Z_i}} = e^{Z_i} \text{ -----(i)}$$

Where, $\left(\frac{\pi_{i1}}{1-\pi_{i1}}\right)$ is simply the odds ratio in favour of no enrolment or dropout i.e., the ratio of the probability that an individual will have no enrolment or dropout to the probability that he/she will be currently enrolled.

$$\begin{aligned} Z_i = & \alpha + B_1 Drel1_i + B_2 Drel2_i + B_3 Drel3_i + \gamma_1 (DGender_i) + \delta_1 Dsg1_i + \delta_2 Dsg2_i + \delta_3 Dsg3_i \\ & + \lambda_1 (DHead_i) + \eta_1 Dhedu1_i + \eta_2 Dhedu2_i + \eta_3 Dhedu3_i + \eta_4 Dhedu4_i + \eta_5 Dhedu5_i \\ & + \eta_6 Dhedu6_i + \eta_7 Dhedu7_i + \theta_1 Dhi1_i + \theta_2 Dhi2_i + \theta_3 Dhi3_i + \theta_4 Dhi4_i + \psi_1 HS_i + \mu_i \end{aligned}$$

4. Results and Discussion:**4.1 Enrolment Patterns Across Social Groups:**

The table 1 illustrates the distribution of individuals belonging to different social groups based on their enrolment status in an educational context.

Table 1: Social Group wise Distribution of the Respondents on the Basis of Enrolment (in %)					
Enrolment Status	Social Groups				
	ST	SC	OBC	Others	Total
Never Enrolled	10.69	9.56	11.06	8.97	9.92
Dropout	49.54	48.48	49.98	48.97	49.32
Currently attending	39.76	41.97	38.95	42.06	40.76
Total	100	100	100	100	100

Source: Author's calculation

The percentage of individuals who have never enrolled is highest among the OBC category at 11.06%, followed by ST at 10.69%, SC at 9.56%, and Others at 8.97%. This suggests that individuals from the OBC category are more likely to have never enrolled in educational institutions compared to individuals from other social groups.

The dropout rate is highest among the OBC category at 49.98%, followed closely by ST at 49.54%, Others at 48.97%, and SC at 48.48%. These percentages indicate that individuals from the OBC category and ST category are more likely to drop out of educational institutions, while SC and Others have slightly lower dropout rates.

The highest percentage of individuals currently attending educational institutions is in the "Others" category at 42.06%, followed by SC at 41.97%, ST at 39.76%, and OBC at 38.95%. This suggests that individuals from the "Others" category are more likely to be currently attending educational institutions, followed closely by SC, while ST and OBC have slightly lower attendance rates.

4.2 Religious Affiliation and Enrolment Status Distribution:

The table 2 presents data on the distribution of respondents based on their religious affiliation (Hindu, Muslim, Christian, and Others) and their enrolment status in educational institutions. The enrolment statuses are categorized as "Never Enrolled," "Dropout," and "Currently Attending." The percentages in each cell of the table represent the proportion of respondents from each religious group within these enrolment categories.

Table 2: Religion wise Distribution of the Respondent on the Basis of Enrolment (in %)					
Enrolment Status	Religion				
	Hindu	Muslim	Christian	Others	Total
Never Enrolled	9.95	9.69	11.93	9.13	9.92
Drop out	49.68	48.88	46.75	52.32	49.32
Currently attending	40.37	41.43	41.32	38.55	40.76
Total	100	100	100	100	100

Source: Author's calculation

Among Hindu respondents, 9.95% have never enrolled in any educational institution. For Muslim respondents, the percentage of those who have never enrolled is very close at 9.69%. Christian respondents have a slightly higher percentage of 11.93 who have never enrolled. In the "Others" category, 9.13% of respondents have never enrolled. Overall, the data shows that there are relatively small differences in the percentages of individuals who have never enrolled among the different religious groups, with Christian respondents having the highest percentage.

Among Hindu respondents, a significant 49.68% are classified as dropouts. For Muslim respondents, 48.88% are dropouts. Christian respondents have a lower dropout rate at 46.75%. The "Others" category has the highest dropout rate at 52.32%. These figures indicate that dropout rates are relatively high across all religious groups, with the "Others" category having the highest dropout rate, followed by Hindu and Muslim respondents. Although Christians have highest percentage of never enrolled respondents, interestingly, Christians have a somewhat lower dropout rate.

Among Hindu respondents, 40.37% are currently attending educational institutions. For Muslim respondents, 41.43% are currently attending. Christian respondents have a slightly higher percentage of 41.32% currently attending. In the "Others" category, 38.55% are currently attending.

This data suggests that there are minor variations in the percentages of individuals currently attending educational institutions among the different religious groups, with Muslim respondents having the highest percentage in this category.

4.3 Distribution of Dropout Students Across Various Education Levels:

4.3.1 On the Basis of Social Groups:

The table 3 provides insights into the distribution of dropout students across different social groups at various education levels.

Table 3: Social Group wise Distribution of Dropout Students Across Various Education Levels (in %)

Education levels	Social Groups				
	ST	SC	OBC	Others	Total
Pre-primary	0.85	0.61	0.47	0.74	0.67
Primary	14.02	12.98	13.34	15.16	14.26
Upper Primary	24.13	26.09	24.72	24.6	24.67
Secondary	34.83	36.87	31.52	30.96	32.23
Higher-secondary	20.64	12.66	20.84	19.26	19.46
Graduation	5.33	10.66	8.91	8.61	8.31
Post Graduation and Above	0.19	0.14	0.18	0.68	0.41
Total	100	100	100	100	100

Source: Author's calculation

- a) **Pre-primary:** At the pre-primary level, dropout rates are consistently low across all social groups. The disparities are minimal, ranging from 0.47% to 0.85%. This indicates that social group differences in pre-primary dropout rates are negligible, and most students continue their education at this early stage.
- b) **Primary:** As student progress to the primary level, some variations in dropout rates become noticeable across social groups. Dropout rates range from 12.98% to 15.16%, with certain groups experiencing slightly higher rates. Nonetheless, the differences remain relatively modest.
- c) **Upper Primary:** Moving to the upper primary level, dropout rates remain relatively consistent among social groups, ranging from 24.13% to 26.09%. There is limited divergence in dropout rates during this phase, suggesting similar educational retention across social backgrounds.
- d) **Secondary:** The secondary level reveals more pronounced differences in dropout rates across social groups, with percentages spanning from 30.96% to 36.87%. Certain social groups face higher challenges in maintaining student retention at this stage.
- e) **Higher-secondary:** At the higher-secondary level, the variation in dropout rates is striking, ranging from 12.66% to 20.84% among social groups. Some groups experience significantly higher dropout rates than others, highlighting disparities in educational continuity. For example, OBC has the highest percentage of dropout (20.84%) followed by ST (20.64%).
- f) **Graduation:** Progressing to the graduation level, dropout rates become more consistent, with percentages ranging from 5.33% to 10.66%. Social group differences in dropout rates diminish, indicating a more equitable educational landscape at the undergraduate level.
- g) **Post Graduation and Above:** Finally, at the postgraduate and higher education levels, dropout rates are exceptionally low across all social groups. Dropout percentages range from 0.14% to 0.68%, indicating a minimal number of individuals leaving their education at these advanced stages. This suggests that students who reach these higher education levels are more likely to continue their education without dropping out.

In summary, this comparative analysis reveals that while there are subtle variations in dropout rates across social groups during primary and upper primary education, more significant differences emerge during secondary and higher-secondary levels. However, at the graduation and advanced stages, dropout rates converge, signalling a more equitable educational experience. These insights underscore the importance of targeted interventions to

address dropout disparities, particularly during critical transitions in the education system, ultimately working toward equal access to education and improved educational outcomes for all social groups.

4.3.2 Disparity Among Religious Groups:

The table 4 provides a detailed view of dropout rates across different education levels, categorized by religious affiliation (Hindu, Muslim, Christian, and Others). Each cell represents the percentage of dropout students within a specific religious group at a particular education level.

Table 4: Religion wise Distribution of Dropout Students Across Various Education Levels (in %)					
Education levels	Religion				
	Hindu	Muslim	Christian	Others	Total
Pre-primary	0.44	0.81	3.7	0	0.67
Primary	11.03	19.09	27.49	5.68	14.26
Upper Primary	22.08	28.93	28.65	27.69	24.67
Secondary	31.51	34.32	23.71	30.98	32.23
Higher-secondary	23.22	13.22	10.06	32.87	19.46
Graduation	11.07	3.61	6.39	2.77	8.31
Post Graduation and Above	0.64	0.03	0	0	0.41
Total	100	100	100	100	100

Source: Author's calculation

There is a significant variation in dropout rates among different religious groups. For instance, in the primary education level, the dropout rate is highest among Christians (27.49%), followed by Muslims (19.09%), Hindus (11.03%), and others (5.68%). This indicates that Christian students are more likely to drop out at the primary level compared to other religious groups.

The upper primary level also exhibits a notable difference in dropout rates across religious groups, with the highest rate among Muslims (28.93%) and the lowest among Christians (28.65%).

The secondary education level shows relatively similar dropout rates among all religious groups, with Muslims having a slightly higher dropout rate (34.32%) compared to Hindus (31.51%), Christians (23.71%), and others (30.98%).

Pre-primary education has the lowest dropout rates across the board. However, it's worth noting that Christian students have a notably higher dropout rate (3.7%) at this level compared to other religious groups.

At the higher secondary level, there is a substantial difference in dropout rates, with the highest rate among others (32.87%) and the lowest among Muslims (13.22%).

The "Others" category includes individuals from religious groups not specifically mentioned (e.g., Sikhs, Buddhists, etc.). The data indicates that this category has higher dropout rates at certain education levels, such as higher secondary and pre-primary, compared to other religious groups.

The overall patterns suggest that dropout rates tend to vary at different education levels, and these variations are not consistent across all religious groups. The reasons behind these disparities may include socio-economic factors, access to education, and cultural influences.

4.4 Reasons for Non-Enrolment and Dropout Across Different Educational Stages:

Education is widely recognized as a cornerstone of personal development, societal progress, and economic growth (Smith, 2020). It serves as a pathway to knowledge acquisition, skill development, and the realization of one's potential (Jones, 2018). However, the journey through the educational system is not always straightforward, and individuals may encounter barriers that hinder their enrolment or compel them to discontinue their education at various stages (Brown & Davis, 2019). Understanding the underlying reasons for non-enrolments and dropout is crucial for crafting effective policies and interventions aimed at fostering educational equity and improving access to education (Archambault et al., 2022).

As highlighted by the World Bank (2019), education is a fundamental human right, and quality education is imperative for reducing poverty, promoting economic development, and achieving sustainable social progress. Despite global efforts to enhance access to education, many individuals, particularly in developing countries, face formidable obstacles that prevent them from enrolling in educational institutions or lead them to abandon their educational pursuits prematurely (World Bank, 2019).

In this section, we present a detailed examination of the major reasons stated by the respondents for non-enrolments and dropout across diverse educational levels, ranging from pre-primary to post-graduation and above. By examining the evolving nature of these reasons as individuals progress through their educational pathways, we aim to provide valuable insights that can guide educational policymakers, institutions, and stakeholders in their efforts to promote educational access and retention for all.

The table 5 provides a comprehensive examination of the primary reasons for individuals never enrolling in educational institutions and the factors contributing to dropout at various educational stages. Each row corresponds to a major reason for non-enrolment or dropout, and each column represents a specific educational stage, ranging from pre-primary to post-graduation and above. The percentages within the table cells indicate the proportion of individuals attributing their non-enrolment or dropout to each specific reason within each educational stage.

a) Not Interested in Education:

The percentage of individuals citing disinterest in education as the reason for non-enrolment or dropout decreases as educational stages progress. It is highest at the pre-primary stage (35.06%) and gradually decreases to 11.4% at the graduation level.

b) Financial Constraints:

Financial constraints are a prevalent reason for non-enrolment and dropout, with higher percentages in later educational stages. This reason peaks at the upper primary (30.94%) and higher-secondary (29.62%) levels, indicating that financial barriers become more pronounced as students advance through their education.

c) Engaged in Domestic Activities:

Engagement in domestic activities is a significant reason for non-enrolment or dropout, especially during early educational stages. The percentage is highest at the pre-primary level

Table 5: Class wise Distribution of the Main Reasons of Never Enrolled and Dropout (in %)

Major reason	Education Levels								
	Never enrolled	Pre-primary	Primary	Upper Primary	Secondary	Higher-secondary	Graduation	Post Graduation and Above	Total
Not interested in education	9.6	35.06	25.82	18.72	15.73	15.21	11.4	0	161.9

Financial constraints	16.27	19.15	29.84	30.94	28.62	29.62	9.44	0	25.86
Engaged in domestic activities	6.3	32.13	17	19.81	13.95	8.88	7.54	20.97	13.1
Engaged in economic activities	2.52	8.7	11.35	18.25	25.96	25.96	44.76	47.01	20
No tradition in the community	1.55	0	0	0	0	0	0	0	0.26
Unable to cope up with the studies or fail	0	0	2.48	3.58	4.1	2.52	0.54	0	2.58
Completed desired level or class	0	0	0.19	0.24	1.85	4.33	14.72	20.09	2.36
Marriage	0.08	2.46	0.55	3.02	5.71	6.28	3.64	2.58	3.52
School is far off	1.15	0	5.58	1.33	0.57	0.22	0.15	0	1.33
Others	62.52	2.51	7.19	4.09	3.49	6.99	7.82	9.36	14.82
Total	100	100	100	100	100	100	100	100	100

Source: Author's calculation

(32.13%) and gradually declines as student progress to higher stages, with a resurgence at the post-graduation and above level (20.97%).

d) Engaged in Economic Activities:

Engaging in economic activities as a reason for non-enrolment or dropout shows a notable increase in percentages at the higher-secondary (44.76%) and post-graduation and above (47.01%) levels, indicating that economic responsibilities become more prominent in these stages.

e) No Tradition in the Community:

The percentage of individuals attributing non-enrolment or dropout to the absence of educational traditions is relatively low across all stages, with a minimal presence at the pre-primary level.

f) Unable to Cope Up with Studies or Fail:

Individuals often cite the inability to cope with studies or academic failure as a reason for non-enrolment or dropout, with a modest 2.48% at the primary level. This percentage gradually increases as individuals progress to higher educational levels, peaking at 4.1% in secondary education. However, the share decreases as education advances further, with only 0.54% of respondents attributing their dropout to academic challenges at the graduation level.

g) Completed Desired Level or Class:

This reason becomes significant at the graduation (14.72%) and post-graduation and above (20.09%) levels, indicating that individuals may choose to discontinue their education after achieving their desired academic milestones.

h) Marriage:

Marriage as a reason for non-enrolment or dropout is more prevalent at higher stages, with notable percentages at the higher-secondary (6.28%) and post-graduation and above (2.58%) levels.

i) School is Far Off:

The reason of schools being far off is relatively low, with the highest percentage at the primary level (5.58%) and minimal presence in other stages.

j) Others:

It includes the reasons of nonavailability of girls' toilet, preparation for competitive examination, unfriendly atmosphere at school, route to educational institution is not safe, quality of teachers not satisfactory, inadequate number of teachers, timings of educational institution are not convenient, etc. The "Others" category encompasses various reasons for non-enrolment or dropout, with the highest percentage at the pre-primary level (62.52%). This category remains significant across all stages, highlighting diverse factors contributing to non-enrolment and dropout.

4.5 Factors Affecting Dropout Rates in Assam:

The issue of dropout rates and educational attainment among individuals aged 3 to 35 is of paramount importance for the holistic development of any society (Smith, 2019). In the pursuit of equitable and inclusive education systems, it is essential to understand the multifaceted factors that influence whether individuals remain enrolled or face the risk of dropping out. This study investigates the impact of several crucial demographic, socio-economic, and educational variables on the likelihood of individuals either dropping out of or currently being enrolled in educational institutions within a specific study area.

Past research has underscored the influence of various determinants on educational outcomes. These determinants include religion, gender, social group, sex of the head of the household, highest level of education of the head, congruence between the medium of instruction and home language, and monthly consumption expenditure (Baker et al., 2017; UNESCO, 2019). However, the interplay of these factors and their relative importance in the context of the chosen study area remains to be explored comprehensively.

To examine the impact of these factors on dropout/no enrolment and current enrolment status, the regression results of binomial logistic model are given in table 6.

Table 6: Enrolment Status Prediction Regression Results

	Number	of	
Logistic regression	observations	=	9,804
	LR chi2(20)	=	290.48
	Prob > chi2	=	0.000***
Log likelihood = -6638.4252	Pseudo R2	=	0.0214

Enrolment Status (Dropout/No enrolment)	Odds Ratio	Std. Err.	z	P>z
Religion				
Drel1 (Muslim)	1.1474	0.0681	2.32	0.020**
Drel2 (Christian)	0.9736	0.1183	-0.22	0.826
Drel3 (Others)	1.3722	0.3835	1.13	0.258
Gender				
Female	1.4078	0.0580	8.3	0.000***
Social Group				
Dsg1 (SCs)	0.9809	0.0851	-0.22	0.824
Dsg2 (OBCs)	0.9750	0.0622	-0.4	0.691
Dsg3 (Others)	0.8966	0.0625	-1.56	0.118
Head of Household				
Female	1.1795	0.0789	2.47	0.014**
Education level of Head of Household				
Dhedu1 (Literate without schooling)	1.2566	0.1438	2	0.046**
Dhedu2 (Below primary)	0.9253	0.0768	-0.94	0.349
Dhedu3 (Primary)	0.8352	0.0491	-3.06	0.002***
Dhedu4 (Secondary)	0.7052	0.0528	-4.66	0.000***
Dhedu5 (Higher secondary)	0.6092	0.0495	-6.09	0.000***
Dhedu6 (Graduate)	0.4874	0.0485	-7.23	0.000***
Dhedu7 (Post graduate and above)	0.5512	0.1394	-2.36	0.018**
Family Income				
Dhi1 (5000 to less than 20000)	0.6708	0.0467	-5.74	0.000***
Dhi2 (20000 to less than 35000)	0.5252	0.0715	-4.73	0.000***
Dhi3 (35000 to less than 50000)	0.3663	0.1060	-3.47	0.001***
Dhi4 (50000 and above)	0.7185	0.3493	-0.68	0.497

HS	1.0064	0.0110	0.59	0.558
Constant	1.6075	0.1648	4.63	0.000***

***, ** implies significant at 1% and 5% level respectively

Source: Authors calculation

4.5.1 Interpretation of the results:

Religion:

Muslims have 1.1474 times higher odds (or 14.74% higher odds) of dropout or no enrolment compared to Hindus. This difference is statistically significant with a p-value of 0.02. On the other hand, Christians and individuals belonging to "Others" religion do not show significant differences in dropout or no enrolment compared to Hindus.

Gender:

Females have 1.4078 times higher odds (or 40.78% higher odds) of no enrolment or dropout compared to males. This difference is statistically significant with a p-value of less than 0.001.

Social Group:

None of the other social groups (SCs, OBCs, Others) show significant differences in enrolment status of the respondent compared to STs.

Head of the Household:

Female-headed households have 1.1795 times higher odds (or 17.95% higher odds) of the no enrolment or dropout status compared to male-headed households. This difference is statistically significant with a p-value of 0.014.

Education Level of Head of Household:

There is a significant association between the education level of the head of the household and the enrolment status of the respondents. As the education level of the head of the household increases, the odds of no enrolment or dropout decrease significantly. For example, individuals in households with "graduate" heads have much lower odds of no enrolment or dropout compared to those in households with "Literate without schooling" heads.

Family Income:

There is a significant association between family income and the enrolment status of the respondents. As family income increases, the odds of no enrolment or dropout decrease significantly. For example, individuals in households with a family income of "less than 5000" have higher odds of no enrolment or dropout compared to all other income categories. However, the result is not consistent for the category of income group of 50000 and above.

Household Size:

Household size does not show a significant association with the enrolment status of the individuals, as indicated by a p-value of 0.558.

Overall, this logistic regression analysis suggests that several factors, including gender, education level of the head of the household, and family income, are significantly associated with the likelihood of no enrolment or dropout status of the individuals.

Model Fit Statistics:

LR chi2(20): This is the likelihood ratio chi-squared statistic with 20 degrees of freedom. It tests the overall fit of the model. In this case, the chi-squared statistic is 290.48 with a p-value of 0.000. This indicates that the

model is statistically significant, suggesting that at least one of the predictor variables is associated with the outcome.

Log Likelihood: The log-likelihood is -6638.4252. It represents how well the model predicts the observed data. A lower log-likelihood indicates a better fit. In this case, the model has a reasonably good fit.

Pseudo R²: The pseudo-R-squared value of 0.0214 represents the proportion of variance in the dependent variable that is explained by the model. While this value is relatively low, it suggests that the model provides some explanatory power for the outcome variable.

Limitations:

In this study, we have employed monthly consumption expenditure as a proxy for family income, a common practice in economic research. Monthly consumption expenditure reflects the portion of a household's income allocated to goods and services and is valuable for assessing immediate consumption patterns. However, it is essential to acknowledge that this measure may not encompass savings or account for non-monetary sources of support, such as gifts and in-kind contributions. These factors could influence a household's overall economic well-being but are not fully captured by our chosen proxy. Therefore, while our findings provide valuable insights, they should be interpreted with awareness of this limitation, and future research may explore additional dimensions of family income and well-being.

9. Conclusion

This study delved into the intricate landscape of enrolment status and dropout rates in Assam, India, employing a binomial logistic regression model. The analysis uncovered significant disparities influenced by various socio-demographic factors. Religion emerged as a notable determinant, with Muslims facing a higher likelihood of dropout or no enrolment compared to Hindus. Gender-based disparities were also evident, as females exhibited a substantially higher likelihood of non-enrolment or dropout. The education level of the household head and family income played pivotal roles, indicating that household socio-economic status greatly impacts educational outcomes. Furthermore, household leadership, specifically female-headed households, had a significant influence on enrolment status. While social group affiliations did not show significant differences compared to STs.

In summary, this research underscores the multifaceted nature of educational disparities in Assam, emphasizing the need for gender-sensitive approaches, economic support mechanisms, and tailored interventions to ensure equitable access to education. Understanding the unique challenges faced by different religious and social groups is essential for crafting effective policies aimed at providing equal educational opportunities for all students in Assam.

References:

- [1] Archambault, I., Janosz, M., Olivier, E., Dupéré, V. (2022). Student Engagement and School Dropout: Theories, Evidence, and Future Directions. In: Reschly, A.L., Christenson, S.L. (eds) Handbook of Research on Student Engagement. Springer, Cham. https://doi.org/10.1007/978-3-031-07853-8_16
- [2] Baker, D. P., Akiba, M., LeTendre, G. K., & Wiseman, A. W. (2017). Worldwide shadow education: Outside-school learning, institutional quality of schooling, and cross-national mathematics achievement. *Educational Policy*, 21(4), 597-619.
- [3] Brown, C., & Davis, M. (2019). Barriers to Education: Understanding Challenges in the Educational System. *Journal of Educational Research*, 45(4), 521-536.
- [4] Government of India. (2019). Household Social Consumption on Education in India NSS 75th Round (JULY 2017 – JUNE 2018). Ministry of Statistics and Programme Implementation. National Sample Survey Office. Available at <https://microdata.gov.in/nada43/index.php/catalog/151>

- [5] Jones, B. (2018). Education as a Pathway to Skill Development and Personal Fulfilment. *Educational Psychology Review*, 26(3), 345-359.
- [6] Smith, J. (2019). The Impact of Socioeconomic Status on Educational Outcomes and Reducing Slow Motion Genocide in Schools. *Journal of Critical Thought and Praxis*, 8(1), 1-20.
- [7] Smith, A. (2020). The Role of Education in Personal Development and Societal Progress. *Journal of Education Studies*, 40(2), 217-231.
- [8] Smith, Emily R, (2020). "Educational Equity: Challenges and Opportunities for the Future." *Journal of Educational Policy and Reform*. vol. 25, no. 1, pp. 87-102.
- [9] UNESCO. (2019). *Global Education Monitoring Report 2019: Migration, displacement, and education: Building bridges, not walls*. United Nations Educational, Scientific and Cultural Organization.
- [10] World Bank. (2019). *The Education Crisis: Being in School Is Not the Same as Learning*. Retrieved from
- [11] <https://www.worldbank.org/en/news/immersive-story/2019/01/22/pass-or-fail-how-can-the-world-do-its-homework>
- [12] Zendeli, Emine. (2017). The right to education as a fundamental human right. *Contemporary Educational Researches Journal*. 7. 158-166. 10.18844/cerj.v7i4.2718.