Impact of Armed Ethnic Conflicts on Education: A Small Sample Study of Learning Disruptions Among Displaced Learners

Tapan Kumar Chakrabarty
Department of Statistics, North-Eastern Hill University
Shillong-793022, Meghalaya, India

ABSTRACT

Background:

The armed communal and ethnic violence in India's north-eastern state of Manipur that broke out on May 3, 2023, between the valley-based Meitei people and the hills-based Kuki-Zo tribal communities has witnessed more than 220 people killed, scores missing, and approximately 60,000 displaced. A year after the first violent clashes, tensions between the two communities appear undiminished. Military camps now dot the landscape in a stark reminder of instability and insecurity gripping the region. The imposition of frequent curfews amid strikes, clashes between communities and armed militia, and complete closures of educational institutions severely disrupted the school life of young learners in Manipur and created a unique case of educational emergencies.

Objectives:
Drawing on insights from a small sample of young displaced learners, this study explores the extent of reported learning disruptions, challenges in accessing safe learning spaces and resources, psychosocial trauma, and the ability to adapt to new educational settings. These factors are analyzed in relation to the learners' demographic profiles—such as gender, residence, age, ethnicity, religion, family structure, and financial status—to identify the most vulnerable population subgroups.

Data and Methods:
The study has proposed and adopted a measurement framework of learning disruptions and barriers (LDB). In this study, LDB is attempted to be captured using four basic dimensions, (i) access to learning resources (ii) psychosocial wellbeing (iii) learning outcomes, and (iv) learning environment at home and parental support. Each of these dimensions is then measured by several indicators.
This study is based on the responses obtained from the displaced young learners from Manipur who are currently enrolled in some courses of study at educational institutions in Shillong, Meghalaya. The study involved a population of 340 learners recruited from 20 different institutions in Shillong City who are currently enrolled at the higher secondary, undergraduate, and postgraduate levels. The study adopted a stratified simple random sampling plan, and data collection was carried out using a tested instrument during the months of May and June 2024.

Data collected was analyzed using advanced statistical methods to estimate the indicators of LSD in multiple dimensions and confidence intervals are reported. The complex sampling design based analysis of associations and binary logistic regressions are used to study the multivariate

relationship and impact study of the chosen indicators of LDB. Further, the study employed advanced structural equation modeling (SEM), to demonstrate the effectiveness of the selected indicators in each dimension of learning disruptions.

Results:

The study reveals that 70% of learners come from rural areas, with 82% identifying as Christian and 81% as Tribal. Key statistically significant factors contributing to learning disruptions include conflict-driven displacement, psychosocial and emotional trauma, reduced retention capacity, and financial challenges caused by conflict. Approximately 60% of respondents are estimated to have been displaced due to conflict, with 74% suffering from psychosocial and emotional trauma.

Design-based association analyses identify residence, gender, age, religion, and ethnicity as significant factors influencing learning disruptions, particularly the timing of displacement and the likelihood of dropping out. Multivariate logistic regressions further confirm that these subgroups experienced severe disruptions and displacement during the conflict. For example, the odds of relocating due to conflict are 4.35 to 7.5 times higher for learners displaced after the conflict began. This suggests that those who moved after the conflict's onset were primarily forced to do so. Additionally, students relying on parental support for educational expenses face a 2 to 3 times higher likelihood of forced displacement compared to others.

This research provides evidence-based insights, offering policymakers and educators valuable guidance in developing strategies to support displaced students and improve their educational experiences in conflict-affected regions.

Key Words: Conflict, learning disruption, statistical association, logistic regression, stratified sampling, Horvitz-Thompson estimator

Extended Summary

1. Background of the Study

Ethnic conflict can lead to significant displacement, profoundly affecting learners' educational opportunities. When communities experience violence, many families are forced to flee their homes, resulting in widespread displacement. Displacement often disrupts schooling as students move to unfamiliar areas or refugee camps where educational facilities may be lacking or overcrowded.

On May 3, 2023, the North Eastern Indian state of Manipur witnessed repeated inter-ethnic clashes primarily between two original ethnical communities, the Meitei community and the Kuki tribe in Manipur’s Churachandpur town, which is close to Imphal, the state’s capital. The immediate reason for the clashes has been attributed to the non-tribal Meitei people’s demand for scheduled tribe status.

Manipur situated in the North Eastern part of India is bounded by Nagaland in the North, Mizoram in the South, Assam in the west, and the borders of the country Myanmar imp the east. The state is surrounded by mountain ranges all around.

The state of Manipur is composed of three major ethnic communities—the Meiteis, the Kukis, and the Nagas. The Meiteis are the majority 54 percent of the population, followed by the Nagas and the Kukis constituting around 43 percent. The Hindu Meiteis mostly live in and around the Imphal valley and the Kukis and the Nagas live in the hill regions.

In Manipur, almost all the communities or tribes have their 'armed outfits' with their respective demands and overlapping goals. In contemporary Manipur, ethnicity and consequently 'nationality' became the 'master identity' in the context of the various communities particularly the Nagas, Meiteis, and the Kukis (Khangchian, 2019). Manipur has a long record of insurgency and inter-ethnic violence.

The recent violence between the valley-based Meitei people and the hills-based Kuki-Zo tribal communities has witnessed more than 220 people killed, scores missing, and approximately 60,000 displaced, and the burning of thousands of structures (including homes and religious places and schools). Furthermore, thousands of people including their families and children are now living in hundreds of relief camps in the state.

This ethnic clash in Manipur has disturbed regular school life so much that there were frequent closures of schools due to the imposition of the curfew, strikes, and clashes with the military along with the internet blackout thus no e-learning could be possible. These events have not only been the starting points of the decline of teaching time but have also sown fear and anxiety among the students. The learners were severely psychologically harmed; being the patients living in the conflict zone that disastrously influenced their intellectual prosperity, as a consequence, they could not finish their education. Furthermore, the quality of education has been compromised as many schools lack basic amenities and resources due to the ongoing instability. The lack of learning materials has resulted in the decline of the overall learning outcomes of the students. These situations have deepened the gap between the different ethnic groups and set a scenario of disharmony and exclusive societies among students.

2. Statement of the Problem

The conflict-hit state of Manipur has witnessed a complete collapse of the educational system and the inaccessibility of learning resources. Persistent law and order instability has led to the closure of educational institutions, displacement of teachers and students, and a general atmosphere of fear and uncertainty. The psychological toll on students, coupled with interruptions to academic calendars, has hindered their ability to acquire essential knowledge and skills. As a result, the education sector in Manipur faces formidable challenges in ensuring equitable access to education and maintaining educational standards amidst ongoing conflict and instability. The emergency created by the ongoing ethnic conflict has resulted in the displacement of several learners of the state to nearby and far-off places.

In the backdrop of ethnic conflict in the State of Manipur, many of the learners relocated to Shillong, the capital city of a neighboring north-eastern state Meghalaya. The city, which has a large number of premier public higher educational institutions and schools of excellence, earned a historical reputation as an important destination of higher learning among the students of eastern and north-eastern India.

The present study seeks to investigate the type and extent to which ethnic conflict has resulted in various disruptions and adversities to the lives of young learners of Manipur who are currently enrolled in the Higher Secondary, undergraduate, and postgraduate institutions located in the city of Shillong using a small sample survey and interview.

3. Objectives of the Study

1. To explore the background profile of the displaced learners from the conflict-affected places of Manipur.
2. To provide estimate of the extent of learning disruptions as measured by various indicators.
3. To identify the statistically significant factors associated with the various indicators of learning disruptions and barriers.
4. To analyze the impact of the ethnic conflict that resulted in financial constraints on the sustenance of education and the likelihood of dropping out of school, as well as the psychosocial impact, including trauma, retention capabilities, and reduced academic performance.
5. To assess the capability of learners to integrate into new school environments and cultures.
6. Assessing the gendered impact of ethnic conflict on educational challenges.
7. To examine institutional support provided to the displaced learners in adapting to the new environment.

4. Methodology, Research Design and Data

4.1 Measurement Framework of Learning Disruptions and Barriers(LDB)

Measures of LDB during armed ethnic conflict can be multifaceted and include both qualitative and quantitative aspects. In this study, LDB is attempted to be captured using four basic dimensions, (i) access to learning resources (ii) psychosocial wellbeing (iii) learning outcomes, and (iv) learning environment at home and parental support. Each of these dimensions is then composed of several indicators as indicated in the following table for which the learners' responses are collected.

Table 4.1 Dimension and Indicators of Learning Barriers

	Dimension

	Access to Learning Resources	Psychosocial Wellbeing	Learning Outcomes	Learning Environment At Home
Indicators	School Suspension (SS)	Psychological and emotional trauma (PET)	Academic performance before displacement (AP)	Effect of conflict resulting in financial difficulties (FD)
	Interruption of Classes (IoC)	Recruitment of peers as soldiers for locality protection (RoP)	Diminished retention capability (DRC)	Parental Support (PS)
	Displacement due to Conflict (DC)		Duration of Discontinuity of Study (in Months) (DoD)	Siblings studying outside the state (at least one) (SSO)
	No online classes during the conflict (NOC)		Leaving institutions in mid-calendar year (LM)	

4.2 Sampling Design

This study is based on the responses obtained from the displaced young learners from Manipur who are currently enrolled in some courses of study at educational institutions in Shillong. The study involved a population of 340 learners, recruited from 20 different institutions in Shillong City who are currently enrolled at the higher secondary, undergraduate, and postgraduate levels. The study adopted a stratified simple random sampling plan and data collection was carried out by using a tested instrument during the month of May and June, 2024.

The study adopted a stratified simple random sampling plan. This approach was employed to choose participants for the study, dividing the population into distinct, similar subsets to ensure a fair representation of units in the sample across all levels. Three strata were identified based on the level of courses that is the higher secondary students, the undergraduate students, and the postgraduate students.

To arrive at an appropriate sample size, to ensure the reliability and validity of research findings, Cochran's approach of sample size determination in estimating the proportion of an attribute in stratified random sampling design was used followed by a proportional allocation of size to each stratum. After obtaining the stratum sample size, samples were selected randomly using simple random sampling without replacement from the target population of each stratum.

The following table depicts the population and sample sizes of each stratum.

Table 4.1 Stratum Population and Sample Sizes

Stratum (h)	Population stratum size (N_h)	Stratum sample size (n_h)
Higher Secondary	44	11
Undergraduate	250	65
Postgraduate	46	12
Total	340	88

The data was collected from the selected students using a structured questionnaire. Questions were framed both for the collection of qualitative and quantitative primary data. The questionnaires were divided into four parts designated as Part A, Part B, Part C, and Part D. Part A had 17 questions that asked for the personal information of the survey participants. Part B contained 8 questions along with sub-questions, these questions were based on educational queries. Part C covered questions on the types and extent of disruptions in the education and schooling of the learners caused by the conflict. Part D of the questionnaire had questions focused on integration to new schools and the support service inquiry.

The response rate for this study is given in Table 4.2.

Table 4.2 Response rate

SN	Stratum	Total Questionnaire distributed	Total Questionnaires returned	Response rate
1	Higher Secondary	20	11	55%
2	Undergraduate	100	65	65%
3	Postgraduate	31	12	38.7%
Total		151	88	58.3%

This return rate of 58.3% indicates a moderate level of engagement and willingness among the respondents to share their experiences and perspectives. Such a response rate is encouraging and suggests that the data collected will provide a reliable basis for our analysis. However, it is important to consider that factors such as the method of distribution and the current situation in the region may have influenced the return rate. Despite these potential limitations, the data collected through these questionnaires will be invaluable for understanding the impact of ethnic conflicts on the education of displaced learners in Manipur.

5. Statistical Analysis of Data and Results

This section provides a comprehensive analysis of sampled data using appropriate statistical techniques and complex sampling design weights to generalize the results for the population.

5.1 Background profile of the displaced learners

The proportion of the respondents in each background category was estimated using the Horvitz-Thompson π-estimator of proportion in the h^{th} stratum written as,

$$p_h = \frac{1}{n_h}\sum_{k\in S_h} a_{kh} \text{ with } a_{kh} = \begin{cases} 1 \text{ if yes} \\ 0 \text{ if no} \end{cases}$$

and S_h is the sample selected in the h^{th} stratum.

Then the estimated stratum proportions are then combined using the inclusion probability of each stratum as follows:

$$\hat{p}_{st} = \frac{1}{N}\sum_{h=1}^{H}\sum_{k\in S_h}\frac{a_{kh}}{\pi_h}$$

$$= \frac{1}{N}\sum_{h=1}^{H}\frac{N_h}{n_h}\sum_{k\in S_h} a_{kh}$$

$$= \sum_{h=1}^{H} W_h p_h \cdots \text{(i)}$$

where $W_h = {N_h}/{N}$.

Now,

$$V(\hat{p}_{st}) = \sum_{h=1}^{H} W_h^2 * V(p_h)$$

$$= \sum_{h=1}^{H} W_h^2 * \frac{P_h Q_h}{n_h} * \frac{N_h - n_h}{N_h - 1} \cdots \text{(ii)}$$

where, P_h is the population proportion within stratum h and $Q_h = 1 - P_h$

The estimate

$$\widehat{V}(\hat{p}_{st}) = \sum_{h=1}^{H} W_h^2 * \widehat{V}(p_h) \ldots \text{(iii)}$$

where $\widehat{V}(p_h)$ is an unbiased estimator of $V(p_h)$.

With SRSWOR in the stratum h, we can write,

$$\hat{V}(p_h) = \frac{N_h - n_h}{(N_h - 1) * n_h} * p_h q_h \cdots \text{(iv)}$$

Substituting (iv) in (iii), we get,

$$\hat{V}(\hat{p}_{st}) = \sum_{h=1}^{H} W_h^2 * \frac{N_h - n_h}{(N_h - 1) * n_h} * p_h q_h$$

where, p_h and q_h are estimates of P_h and Q_h respectively.

The 95% Confidence Interval is given by,

$$95\%\ C.I\ = \hat{p}_{st} \pm 1.96 * \widehat{SE}(\hat{p}_{st})$$

where,

$$\widehat{SE}(\hat{p}_{st}) = \sqrt{\hat{V}(\hat{p}_{st})}\ .$$

The following table presents the background profile of the displaced learners from Manipur.

Table 5.1.1. Estimated proportion of learners by background variables

Background Variables	Proportion	Std. Err.	95% Confidence Interval	
Residence				
Urban	0.30	0.05	0.21	0.40
Rural	0.70	0.05	0.60	0.79
Gender				
Female	0.53	0.05	0.43	0.64
Male	0.47	0.05	0.36	0.57
Age				
19 and below	0.55	0.47	0.45	0.64
20 and above	0.45	0.47	0.36	0.55
Religion				
Christian	0.82	0.04	0.73	0.89
Non-Christian	0.18	0.04	0.11	0.27
Ethnicity				
Tribal	0.81	0.04	0.71	0.88

Non-tribal	0.19	0.04	0.12	0.29
Living status of parents				
Only Mother	0.08	0.03	0.04	0.16
Only Father	0.03	0.02	0.01	0.10
Both are alive	0.89	0.03	0.80	0.94
Head of the family				
Father	0.91	0.03	0.83	0.95
Mother	0.08	0.03	0.04	0.16
Others	0.01	0.01	0.00	0.08
Number of family members				
5 and below	0.42	0.05	0.32	0.53
6-9	0.55	0.05	0.44	0.65
10 and above	0.03	0.02	0.01	0.10
Number of brothers				
None	0.10	0.03	0.05	0.19
At least one	0.90	0.03	0.81	0.95
Number of sisters				
None	0.17	0.04	0.11	0.26
At least one	0.83	0.04	0.74	0.89
Number of brothers studying outside Manipur				
None	0.67	0.05	0.56	0.76
At least one	0.33	0.05	0.24	0.44
Number of sisters studying outside Manipur				
None	0.69	0.05	0.59	0.78
At least one	0.31	0.05	0.22	0.41
Parents' education				
Below High School	0.16	0.39	0.10	0.25
Above High School	0.84	0.39	0.75	0.90
Parents' occupation				
Non-salaried job	0.74	0.48	0.63	0.82
Salaried job	0.26	0.48	0.18	0.37

5.2 Estimation of LDB

Table 5.2.1. Estimated proportion of learners who reported LDB

Dimension	Indicators	Proportion	Std. Err.	95% Confidence Interval	
Access to Education (ATE)	School Suspension (SS)	0.57	0.054	0.46	0.67
	Interruption of Classes (IoC)	0.204	0.043	0.131	0.304
	Displaced due to Conflict (DC)	0.59	0.05	0.49	0.69
	No Online Classes (NOC)	0.49	0.05	0.39	0.59
Psychosocial wellbeing (PSW)	Psychological and Emotional Trauma (PET)	0.74	0.047	0.64	0.82
	Recruitment of Peers as soldiers for locality protection (RoP)	0.70	0.049	0.60	0.79
Learning Outcomes (LO)	Academic Performance (AP)	0.83	0.041	0.73	0.90
	Diminished retention capability (DRC)	0.44	0.05	0.34	0.55
	Duration of Discontinuity more than a Month (DoD)	0.51	0.052	0.41	0.61
	Leaving institutions in mid-calendar year (LM)	0.14	0.037	0.078	0.229
Learning Environment at Home (LEH)	Effect of conflict resulting in financial difficulties (FD)	0.90	0.033	0.81	0.95
	Parental Support (PS)	.98	0.016	0.90	0.99
	Siblings studying outside the state (at least one) (SSO)	0.48	0.054	0.37	0.58

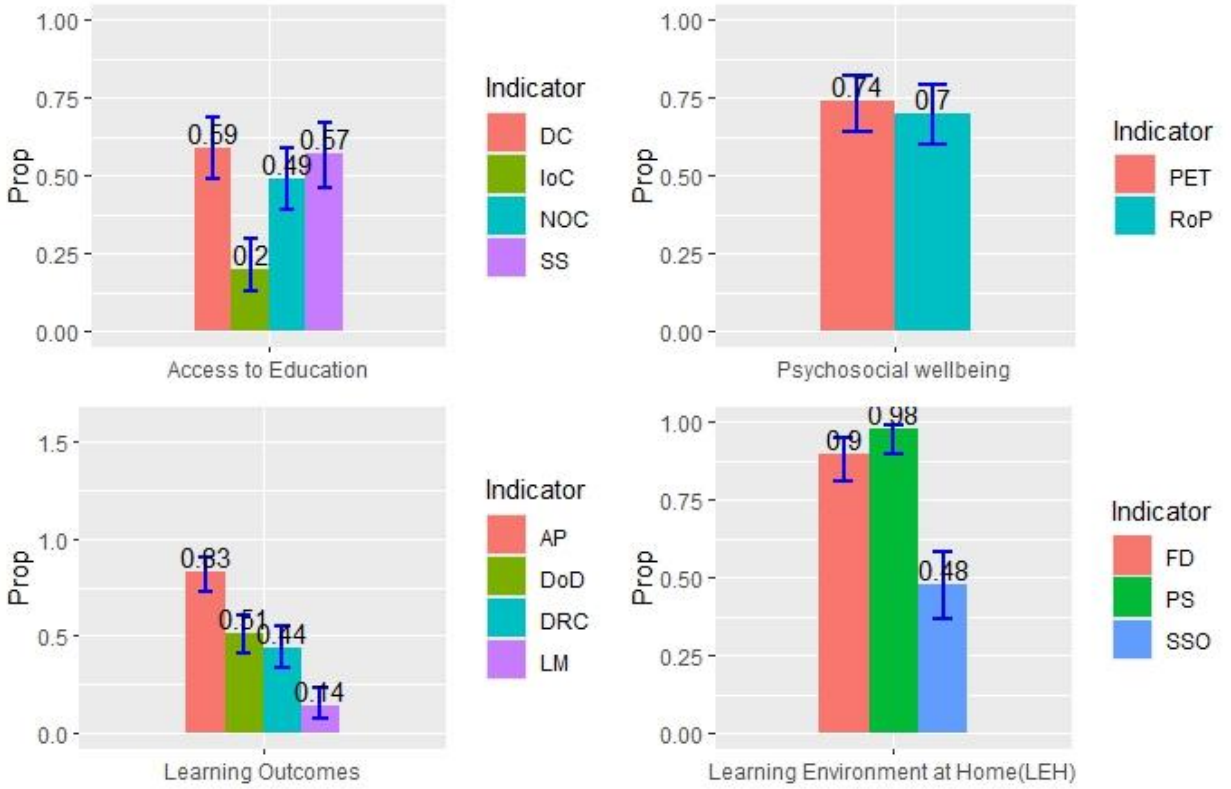

Figure 5.2 Estimated LDB for the displaced learners from Manipur

The results from the analysis suggest that the conflict has had a severe impact on psychosocial well-being and the learning environment at home.

5.3 Analysing Factors Associated with the Indicators of Educational Emergencies

In this subsection, we test the strength of statistical association between several proximate factors and some responses on the indicators of educational emergencies such as the timing of displacement for continuing education, the likelihood of dropping out, psychosocial and emotional trauma, and reduced retention capabilities as experienced by the learners from the conflict-ridden state of Manipur. Design-corrected two-way association tests are carried out and their statistical significances are examined to identify the proximate factors responsible for the indicators of educational emergencies amid armed ethnic violence.

The design-adjusted Rao-Scott Pearson test statistic, computed based on first-order design correction is given by

$$\chi^2_{R-S(1)} = \frac{\chi^2_{Pearson}}{GDEFF}$$

The design-adjusted Rao-Scott Pearson test statistic, computed based on second-order design correction is given by

$$\chi^2_{R-S(2)} = \frac{\chi^2_{R-S(1)}}{(1+a^2)}$$

where a represents the coefficient of variation of the eigenvalues of the D matrix.

Thomas and Rao used simulations to demonstrate that this second-order correction better controls type-1 error rates, especially with substantial variations in the eigenvalues of the D matrix. The *F*-transformed version of this second-order design-corrected version of the Pearson chi-square statistic is currently the default test statistic reported by Stata's svy: tab command for analyses of two-way tables.

5.2.1. Proportion of Learners Displaced after the Conflict Erupted

The study recruited learners who came from Manipur from 2019 to 2023 and are currently enrolled in some courses of study in Shillong city. The sampled learners were asked about their timing of displacement before or after the eruption of violence on May 03, 2023. This is precisely to examine whether the displacement is due to the continuation of education that was disrupted due to the armed conflict. The following table 5.2.1 provides the proportion of learners displaced after the conflict broke out indicating the extent of educational demand in an emergency.

Table 5.2.1 Proportion Displaced after Conflict Erupted

Predictor	Timing of relocation (proportion)	F(1,85)	p-value
Residence			
Urban	0.47	0.34	0.56
Rural	0.53		
Gender			
Female	0.51	0.0002*	0.1
Male	0.51		
Ethnicity			
Non-Tribal	0.3	3.82**	0.05
Tribal	0.56		
Religion			
Non-Christian	0.19	8.52***	0.004
Christian	0.59		
Living status of parents			
Single parent	0.4	0.53	0.47
Both are alive	0.53		
Annual Income			

Below 3L	0.59	1.61	0.21
Above 3L	0.45		
Parents education			
Below High School	0.64	1.12	0.29
High School and above	0.49		
Parents' occupation			
Both are non-salaried	0.35	3.19	0.08
At least one is salaried	0.57		
Age			
19 and below	0.63	5.75**	0.018
20 and above	0.38		

(*: p < 0.10, **: p < 0.05, ***: p < 0.01)

The test results indicate significant relationships between the timing of displacement and four factors: religion, ethnicity, parents' occupation, and age, with p-values of 0.05, 0.004, 0.08, and 0.018, respectively. Results suggest that the timing of displacement for continuing education in emergencies is significantly associated with these factors. There was also a minor association observed between the timing of displacement and gender, with a p-value of 0.1. However, there is limited or no statistical evidence linking the time of shifting to other background variables.

5.2.2. Proportion of learners with the Likelihood of dropping Out

In this subsection, the statistical association between the likelihood of dropping out as reported by the learners before their displacement with other various background variables is tested using the Design-based F-statistic with the second-order Rao-Scott correction as mentioned earlier. Table 5.2.2 provides the results of the analyses.

Table 5.2.2 Proportion with the Likelihood of Dropping out

Predictor	Likelihood of dropping out (proportion)	F(1,85)	p-value
Residence			
Urban	0.27	2.55*	0.10
Rural	0.45		

Gender			
Female	0.38	0.09	0.77
Male	0.42		
Ethnicity			
Non-Tribal	0.18	4.02**	0.048
Tribal	0.44		
Religion			
Non-Christian	0.31	0.59	0.44
Christian	0.42		
Living status of parents			
Single parent	0.6	1.85	0.18
Both are alive	0.37		
Annual Income			
Below 3L	0.49	2.56*	0.10
Above 3L	0.32		
Parents education			
Below High School	0.5	0.71	0.4
After High School	0.38		
Parents' occupation			
Both are non-salaried	0.4	0.0048	0.94
At least one is salaried	0.39		
Age			
19 and below	0.4	0.0009	0.98
20 and above	0.4		

(*: $p < 0.10$, **: $p < 0.05$, ***: $p < 0.01$)

The test results reveal statistically significant relationships between the likelihood of learners dropping out of school and three key factors: residence, ethnicity, and annual income of parents, with p-values of 0.10, 0.048 and 0.010 respectively; indicating that residence status, ethnicity and parental income are potential factors for the learners with the risk of dropping out from school in a conflict-hit place. On the other hand, minimal or no statistical evidence was found linking dropout rates to other background variables, likely due to the small sample size of the study, which may hinder the detection of such associations.

5.4 Multivariate Logistic Regression Analysis and Adjusted Odds Ratio

In this section, we intend to employ binary response multi-predictor logistic regression models to identify and explore the proximate determinants of educational emergencies after controlling for multiple possible confounders. The finite population regression parameters for a generalized linear model of interest are those values that maximize a likelihood equation for the $i = 1, \ldots, N$ elements in the survey population. For a binary dependent variable y (with possible values 0 or 1), the population likelihood can be defined as

$$L(\boldsymbol{B}|\boldsymbol{x}) = \prod_{i=1}^{N} \pi(\boldsymbol{x_i})^{y_i}(1-\pi(\boldsymbol{x}_i))^{1-y_i}$$

where under the logit link, $\pi(\boldsymbol{x}_i)$ is evaluated using the logistic CDF and the parameters in the specified logistic regression model:

$$\pi(\boldsymbol{x}i) = \exp(\boldsymbol{x}_i\boldsymbol{B}) / [1 + \exp(\boldsymbol{x}_i\boldsymbol{B})] .$$

The finite population model parameters are denoted by the standard alphabetic $\boldsymbol{B}$ to distinguish them from the super population model parameters denoted by β. Here, as in linear regression, the distinction is primarily a theoretical one.

Estimates of these finite population regression parameters are obtained by maximizing the following estimate of the population likelihood, which is a weighted function of the observed sample data and the $\pi(\boldsymbol{x}_i)$ values:

$$PL\ (\boldsymbol{B}\ |\boldsymbol{x}) = \prod_{i=1}^{n}\{\pi(\boldsymbol{x_i})^{y_i}(1-\pi(\boldsymbol{x}_i))^{1-y_i}\}^{w_i}$$

$$With:\ \pi(\boldsymbol{x}_i) = \exp(\boldsymbol{x}_i\boldsymbol{B}) / [1 + \exp(\boldsymbol{x}_i\boldsymbol{B})]$$

Like the standard MLE procedure, this weighted pseudo-likelihood function can be maximized using the iterative Newton–Raphson method, or related algorithms.

We have used Stata to estimate the parameters of the model that uses a pseudo-maximum likelihood estimation procedure. A multi-variate version of Taylor series linearization is applied to compute the sampling variances and covariances of the model parameter estimates.

5.4.1 Conflict-driven forced displacement:

The respondents were asked whether "*the reason for shifting"* the learning place resulted solely from conflict-dampened learning opportunities. The responses were coded as a binary variable with a value of 1 for those who responded "due to conflict" and with a value of 0 otherwise. The proportion of respondents who had reported the problem of shifting due to conflict is estimated as 0.59 with a 90% confidence interval of (0.51, 0.67). Binary logistic regression models, unadjusted and adjusted, were run for this binary response with categorical predictors, Gender, Residence, Religion, Ethnicity, Parents' living status, age, Time of shifting, the learning place before or after the start of the current conflict, and support of overall expenses. The results of the analyses are reported in the following table. Two adjusted models were used. Model 1 did not include ethnicity as a predictor, whereas, Model 2 includes all of the predictors as mentioned.

Table 5.4.1 Unadjusted and adjusted odds ratio from binary logistic regressions: Dependent variable is displacement due to conflict.

Covariate	Unadjusted model	Adjusted Model 1	Adjusted Model 2
	Odds ratio(SE)	Odds ratio(SE)	Odds ratio(SE)
Gender			
Female(Reference category)	-	-	-
Male	1.69(0.76)	3.12***(1.79)	3.68***(2.19)
Residence			
Urban(Reference category)	-	-	-
Rural	0.32***(0.17)	0.21***(0.13)	0.21***(0.13)
Religion			
Non-Christian(Reference category)	-	-	-
Christian	0.85(0.48)	0.58(0.42)	0.40(0.33)
Ethnicity			
Non-Tribal (Reference category)	-	-	-
Tribal	1.42(0.77)	-	1.71(1.3)
Parents Living			
Single Parent (Reference category)	-	-	-
Both alive	1.5(1.02)	2.07(1.39)	2.56*(1.74)
Age			
19 years or below (Ref category)	-	-	-

20 years and above	0.49(0.22)	0.65(0.33)	0.65(0.35)
Time of displacement			
Before conflict(Reference category)	-	-	-
After conflict	4.35***(1.99)	6.24***(3.3)	7.5***(4.13)
Support of overall expenses			
Others(Reference category)	-	-	-
Parents	4.35**(1.99)	2.32*(1.49)	2.76*(1.83)

(*p<0.20, **p<0.10, ***p<0.05)

The analysis reveals that unadjusted binary logistic regressions provide significant statistical evidence linking displacement due to conflict with three background variables: residence, time of relocation, and financial support. All these covariates, including gender, are also found to significantly affect the binary response in both the adjusted models. Specifically, male learners are 3 to 4 times more likely to be displaced by conflict than female learners. Rural students have an 80% lower odds of displacement compared to their urban peers. The timing of relocation also plays a crucial role, with the odds of shifting learning locations due to conflict being 4.35 to 7.5 times higher for students who relocated after the conflict began, indicating that those who moved post-conflict were more likely to be displaced. Additionally, students who rely on their parents for educational expenses face 2 to 3 times higher odds of forced displacement compared to those who do not.

5.4.2 Estimating Structural Equations Model

In order to clarify the path relationships among the variables and test the mediating role of the chosen indicators of the conceptualized dimensions of learning disruptions, this study proposes to use partial least squares (PLS) structural equation model to construct a causal model of the variables.

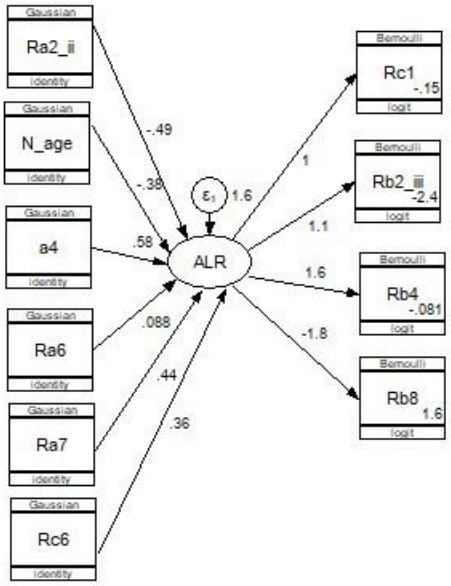

Figure 5.4.2 SEM for Access to Learning Resources(ALR)

A preliminary model is chosen initially considering access to learning resources (ALR) as the first latent variable and using four binary endogenous observed variables school suspension (Rc1), interruption of classes (Rb2_iii), displacement for conflict (Rb4) and no online classes (Rb8). The model used six exogenous categorical observed variables, residence (Ra2_ii), age (N-age), gender (a4), religion (Ra6), ethnicity (Ra7), and financial hurdles (Rc6). In this model, we have used four indicator variables to measure the latent variables ALR. Findings of this preliminary SEM model indicate that at least two of the four indicators used to capture the latent variable ALR, displacement due to conflict, and interruption of classes, namely, are statistically significant for measuring access to learning resources. The structural part of the model is indicative of the fact that many of the variables considered herein are not statistically significant predictors of ALR except the gender and age of the learners.

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