Expenditure on Education by Families of Shifting Cultivation in Nagaland

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Abstract

Shifting Cultivation is a type of cultivation in which fields are slashed, dried and burnt, prepared and grows various types of crops ranging from food grains to vegetables and fruits. The present study was carried out in the District of Noklak, Nagaland. Located far flung in the hilly region of Indo-Myanmar border, shifting cultivation is the most popular form of farming for the tribal households. The present study aims to uncover whether monetary income from shifting cultivation determines education expenditure of the familiesand the percentage share of school dropouts in private and government institution. The study revealed that out of the total students, 61% were enrolled in primary level, 18%, 9% and 12% in secondary, hr. secondary and college & above respectively. With respect to total enrolment, male enrolment was found to be higher than female enrolment, but at college & above level, enrolment of female was more than the enrolment of male. Household expenditure on education was found to be highest at primary level and lowest at hr. secondary level. The study found higher school dropouts among male than female and out of total school dropouts, 28% were from private schools whereas 78% from government schools. Therefore, efficient measures must be taken to improve the existing government schools, to increase expenditure on education and ensure that quality education is provided for all and to all.

Key words: Education, Tribal, Shifting Cultivation, Indo-Myanmar.

JEL Code: D12, I21.

1) Introduction

Shifting Cultivation is a major form of farming practice in the hilly region of Nagaland. Shifting cultivation, also popularly known as Jhum cultivation is a type of cultivation in

which the fields are slashed, dried and burnt on particular day or days in accordance to the geographical location and climate condition. The farmers then prepare the land for sowing of seeds by clearing tree stumps, roots and stones then various types of crops are grown ranging from varieties of food grains to vegetables to fruits, etc and continue to cultivate for few years before leaving it fallow. Given the rough hilly region of the state, shifting cultivation is probably the most suitable form of cultivation for the tribal population of Nagaland. Land use pattern of Nagaland revealed that almost 16% of the total geographical area is under net sown area while about 1,23,909 ha area is under shifting cultivation, which accounts for almost 7.5% of total area, 42% of total cropped area and 47% of net sown area(Kuotsuo et al., 2014).Agriculture has been the major contributor to the state's economy at household level, especially in the rural areas, not only that it is economically significant but it is the basis for cultural and social make up of the state to a large extend. Evidence is that, most for the folktales, folksongs, folkdances, festivals, rituals and traditional values are closely associated with agriculture. For instances, Moatsufestival of Ao Naga is celebrated after sowing and mother earth begin to show sign of fertility(Government of Nagaland, n.d.)and Hashaibubu-ow is a seed sowing folksong of Phom Naga to invoke God's blessings as they prepare their fields for growing paddy, yam, maize,etc(Bhalerao et al., n.d.).It is not simply another form of farming for the people but a lifestyle deeply rooted in the very identity of the people.

Education has been the major driver of all, if not many aspects of economic development and human civilization both at micro and macro level.Education enriches people's understanding of themselves and of the world, helps better their livelihood, increases productivity and creativity and further promotes entrepreneurship and technological advances. The quality of policy making and of investment decisions is bound to be influenced by education while the cognitive skill of the people increases individual returns and economic growth(Ozturk, 2001), (Hanushek and Wößmann, 2007). In the context of education as one of the major contributors to human capital formation of individual household and the nation at large, the government has been making its own share of expenditure on education. The percentage share of expenditure on education with respect to Gross Domestic Product (GDP) in India increased from 0.5% in 2000-01 to 1.11% in 2010-11 further to 1.12% in 2019-20. According the Budget Estimate 2019-20, expenditure of the Centre on education was Rs 194320.09 (in crores) and Rs 651606.12 (in crores) of the State. The percentage share of the Centre and State to the total education expenditure was 22.97% and 77.03% respectively. It was also found that 49.975% and 31.86% of the total education expenditure were made in elementary and secondary education respectively(Government of India, 2022). Like any other investments, investment in education in the form of money or other opportunity cost is driven by the expected returns of it. The return on education can be in the form of monetary value or it can also be in non-monetary values such as change in attitude towards the environment,

more disciplined and more civilized individuals, which without a doubt will increase the wellbeing of the nation as a whole and the family in particular. Thus, expenditure on education both by the government and the households has become important to secure a better future generation.

In social and economic development of a nation, human capital has an important role to play, and the core of it is greatly influenced by the wellbeing of education system. With education, especially higher education, mostly owned and run by Public Sector, the government at Centre and State has crucial role to perform. With the increasing Gross Enrolment Ratio (GER), the number of educational institutions is also increasing whereas the quality was found to be deteriorating, thus, leading to a rise in the annual outflow of students to other western countries (Bhatia and Kumar Dash, 2010). Education thrives people with higher aspirations, better innovative ideas, and creative thinking that help nations to attain faster economic growth. Evidence points to the fact that highly skilled individuals are keys for the invention of new technologies, productive labor force, and for establishing and managing high performing businesses. While the average education outcomes are good enough to take the economy to a higher level, study suggest that improving the opportunities of the less privilege people will lead to huge economic gains(Valero, 2021). Amidst the daily struggles for sustenance through farming and other economic activities, educating the younger generation to suit the changing lifestyle has been a huge challenge for both urban and rural people alike. Before the introduction of institutionalized formal education system, informal education such as family, morungs, festivals, rituals, fields,etc were some of the important platforms for imparting traditional knowledge and other skill-based knowledge among the people of Nagaland. Since for many unsaid reasons, fully depending on agriculture, especially considering the rough geography location, is no longer viable nor highly desirable, most parents have placed their hope on their children for better standard of living and sustenance. In this regard, expenditure on education has become the most if not one of the most important components of household's total expenditure. Although constrained by social and economic backwardness, efforts are made toward family's spending on education as well as institutional expenditure on education. According to NSSO 75th Round report, the average household expenditure on education per person was Rs 8331 for students in general courses during the academic session and the average household expenditure on education per person for the state of Nagaland was Rs 8703 which was higher than the national average(Government of India, 2018; Government of Nagaland, 2018)According to Nagaland Budget Analysis 2023-24, the state of Nagaland has allocated 16.1% of its expenditure on education. This is higher than the average allocation for education by states in 2022-23(14.8%).(Nagaland Budget Analysis 2023-24, n.d.)

Noklak district is the 12th district of Nagaland and is located far east of the state, sharing an international boundary with Myanmar.Being one of the youngest districts of Nagaland, no or little research has been carried out in and of the district so far. The villages under the district are heavily dependent onagriculture, most popularly on shifting cultivation and there is no regular income from farming nor are there other regular sources of income for most of the families of shifting cultivators. Agricultural activities in most places are said to be seasonal, however, shifting cultivators are engaged in farming activity almost throughout the year. From selection of land for cultivation, which is done by the village elders, to harvesting of paddy and other side crops, the farmers are kept busy in farming throughout the year. However, with the pressure of attaining higher social and intergenerational mobility, expenditure on education by the household has become more or less like a compulsion, but the lack of financial support has been a major hindrance for the younger generation in acquiring desired education. Since maximum time and resources of the families are invested in shifting cultivation, the present study aims to uncover whether or not monetary income from shifting cultivation determines education expenditure of the families. This paper also aims to bring into light the percentage share of school dropouts in government and private institutions in the study area.

2) Methodology

With families' expenditure on education by shifting cultivators as one of the main focus of the study, primary data was collected through interview from nine villages under Noklak district. There are three Rural Development Blocks in the district and so, three villages from each block were selected for the survey. Total of 255 shifting cultivator's households were picked for interview, with 85 households from each block.

In accessing the influence of monetary income from shifting cultivation to expenditure on education by the families of shifting cultivators, double logarithm model was used in the study where the dependent variable is the logarithm of annual household expenditure on education and the explanatory variables consist of household characteristics such as age of household head, education level, number of students, household size, employment type and the logarithm of monetary income from shifting cultivation.It was found during the survey that not all the sampled households incurred expenditure on education. Thus, Tobit regression, which is also a censored regression, was used to treat those missing values in the dependent variable.Usingdouble-logarithmic model, expenditure on education was regressed on monetary value of shifting cultivation along with other household attributes such as age of the household head, household size, number of students, etc.

The equation for Double-Logarithmic regression is given as:

$$\ln(\text{Expedu}_i) = \beta_o + \beta_1 \ln(\text{InSF}_i) + \beta_2 \text{HHsz}_i + \beta_3 \text{HHage}_i + \beta_4 \text{Nostds}_i + \sum_{i=2}^{5} \alpha_i \text{Edu}_i + \sum_{i=2}^{3} \gamma_i \text{Emp}_i + \varepsilon_i$$

Where,
$\ln(Expedu_i)$ =Log of Expenditure in education
$\ln(InSF_i)$ = Log of Income from shifting cultivation
$HHsz_i$ = Household size
$HHage_i$= Age of the household head
$Nostds_i$= Number of students in a household
Edu_i= Education level of household head (Illiterate, Primary, Secondary, Hr. Secondary and College & Above, with illiterate as the base)
Emp_i= Employment of the household head (Self employed in Agriculture, Self employed in Business and Salaried, with Self employed in Agriculture as the base)
β_1..... β_4, α_i, γ_i = Coefficient of the corresponding variables
β_o and ε_i = Constant and error term

3) Result and Discussion

a) Current education status of sample families

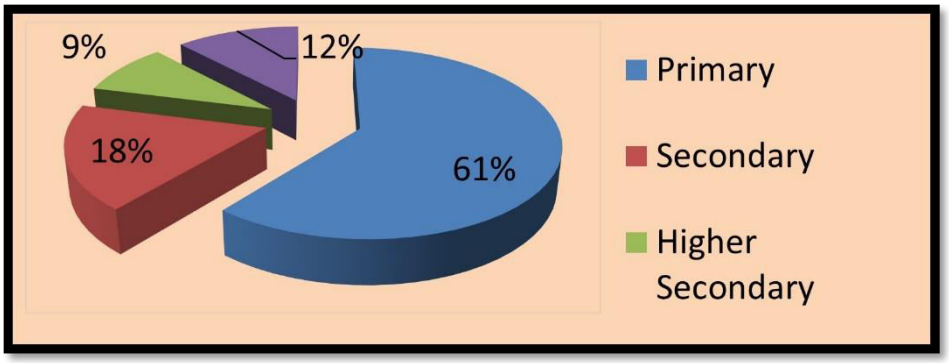
The study focused on the current status of education in the families of shifting cultivators. It was found in Table 1 that the total number of students enrolled in the total sampled households was 729(Seven hundred twenty nine). Out of which, 374 were male and 355 were female. The enrolment in primary level was the highest both for male and female but comparatively very low in the higher levels of education. Of the total students, 263 students were from Thunoknyu Block, 245 from Panso Block and 221 from Noklak Block. It is observable from the data that the difference in number of students in primary and subsequent upper education level was significantly high in all the blocks except that the enrolment in college& above level under Noklak block was found to be much higher than the secondary and hr. secondary enrolment. With the late introduction of modern education system in the rural pockets of Nagaland, the student's enrolment in upper levels of education is still negligible. This study (in Figure 1) has shown that as high as 61% students are enrolled in primary level. The lowest enrolment was in Hr. Secondary level with only 9% of the total enrolment. The percentage share of Secondary and Higher Education (College & Above) were 18% and 12% respectively. Two possible reasons for high primary level enrollment and significantly low enrollment in higher education level are- due to the late inception of institutionalized education system in the study area where parents sending their children to schools are at initial stage and the education facilities available to the villagers were inadequate, or the other possible reason is that, significantly large number of students are dropping out from schools in their lower education level owing to many personal, social and economic reasons.The former is supported by the findings of (Pajankar (2016) that, from secondary level onwards education facilities are available at long distance from the their native villages, there is reluctance from parents to send their children outside for further study, at the same time they are also constrained by

their lack of financial support. For the latter, it was found in figure 4 that the percentage of dropouts with respect to the total dropouts was highest in secondary followed by primary level.

Table 1: Current Household Education Status

Blocks	Sex	Primary	Secondary	Hr. Sec.	College & Above	Total
Thunoknyu	Male	74	31	14	13	132
	Female	73	24	14	20	131
	Total	147	55	28	33	263
Panso	Male	87	23	13	9	132
	Female	73	21	10	9	113
	Total	160	44	23	18	245
Noklak	Male	68	14	9	19	110
	Female	67	17	9	18	111
	Total	135	31	18	37	221
Total	Male	229 (61)	68 (18)	36 (10)	41 (11)	374 (51)
	Female	213 (60)	62 (17)	33 (9)	47 (13)	355 (49)
	Total	442 (61)	130 (18)	69 (9)	88 (12)	729 (100)

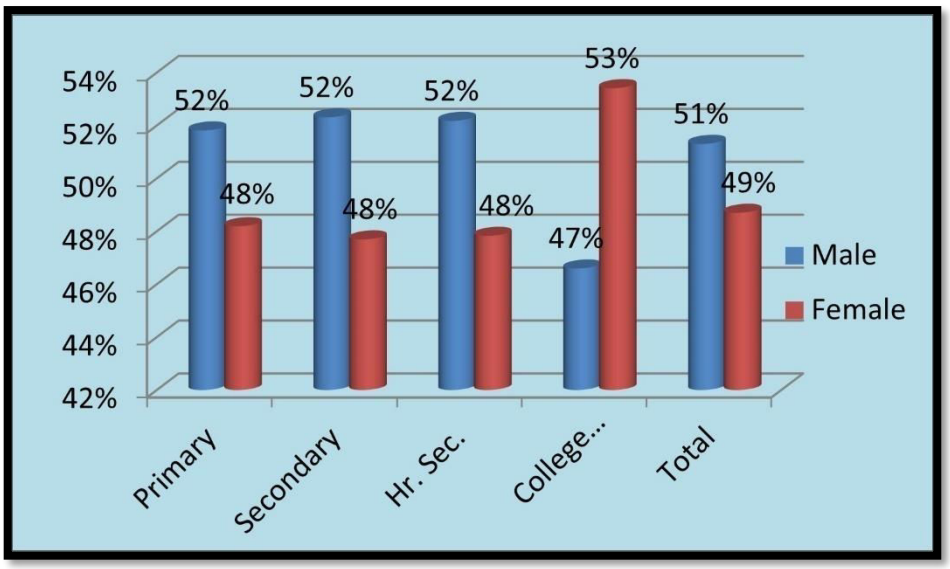
Figure 1: Distribution of students according to their education level



The given Figure 2 shows the Percentage of male and female in different Education level. The male enrolment in primary, Secondary and Hr. Secondary Level was found to be higher in comparison to female enrolment. An important feature of the gender-wise education status of farmers' household wasthat, while the overall enrolment of male was more than that of female, the percentage of female was 53% and the male enrolment was

47% at college & above level. This higher entrance of female into higher education is supported by the data in Figure 4 and Table 3, where, school dropouts were found to be higher among male students than female students. Nagaland Statistical Handbook 2023 also recorded a higher passed percentage of female as compared to male for High School Leaving Certificate (HSLC). For the academic session 2022-23, female passed percentage was 50.27% for government schools and 92.70% for private schools as compared to lower male passed percentage of 47.46% for government schools and 89.42% for private schools(Government of Nagaland, 2023).

Figure 2: Percentage of gender-wise education status at different education level



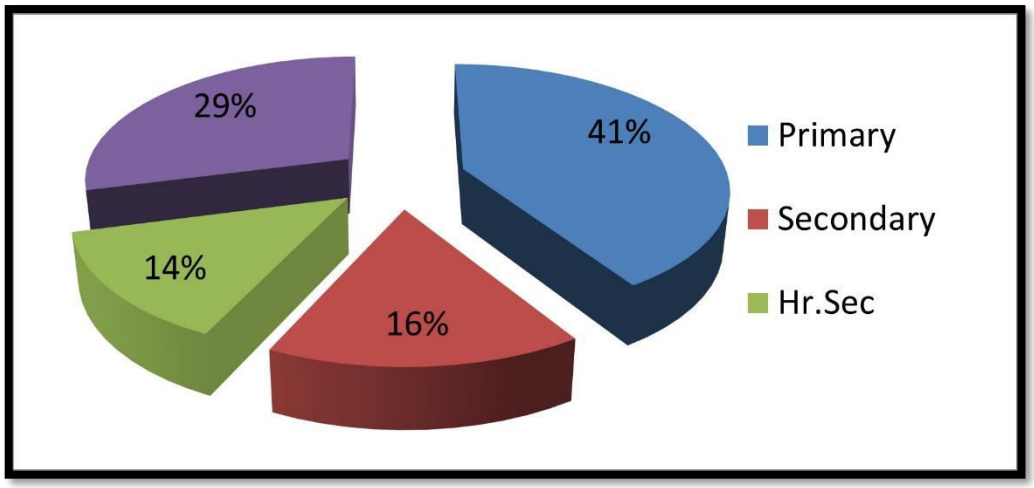
b) Families Expenditure on Education

Expenditure on education can take the form of institutional expenditure and household's expenditure. The present study takes into account the visible expenditure on education, the aggregate expenditure of tuition fees, private coaching fees, stationery cost, uniform, travel cost, and others.Block wise household expenditure of Noklak District (Table 2) shows the education expenditure at different level. At primary level, the percentage share was 36% each in Panso and Noklak block, while the expenditure of Thunoknyu block covered 28%. Secondary and Hr. Secondary expenditure were highest in Thunoknyu Block and lowest in Noklak Block. However, the expenditure in College and above category was highest in Noklak block with 42% of the total expenditure and lowest in Panso Block with 25 percent. The percentage shares of the blocks in the aggregate education expenditure wasfound to be highest in Thunoknyu Block and lowest in Panso Block but the differences are negligible in all the three blocks, which is an indication that all the blocks are giving equal priority in education.

Table 2: Families Expenditure on Education in Percentage

Blocks	Primary	Secondary	Hr.Sec	College&above	Total
Thunoknyu	28%	45%	45%	33%	35%
Panso	36%	33%	30%	25%	31%
Noklak	36%	23%	25%	42%	34%
Total	100%	100%	100%	100%	100%

Figure 3: Household Education Expenditure at different education level in percentage



Contrary to the Government Policy of Free education till the age of 14, the data (Figure 3) revealed that the family's spending on education were largely made at primary level. Education expenditure at Primary Level was found to be 41%, while for Secondary, Hr. Secondary and College & Above were comparatively lower at 16%, 14% and 29% respectively. Corroborating the result of the present study of household expenditure on education at different education levels, a similar study on Household Expenditure on Education also revealed that acquiring primary education was most expensive both in rural and urban areas and that household expenditure on education at primary level was much higher compare to secondary, hr. secondary and higher education level in India(Rao, 2014).Whereas the students' enrolment at collage & above level constituted only 12 % (in Figure 2) of the total enrolment, it was found that the percentage share of education expenditure at college & above level to the total expenditure was 29%.

c) School Dropouts

In the present study, school dropouts are define by those individuals who left their educational institution and are not engage in any economic activity except in agriculture sector nor enrolled in any other skill based education. For simplicity, age group from 15-25

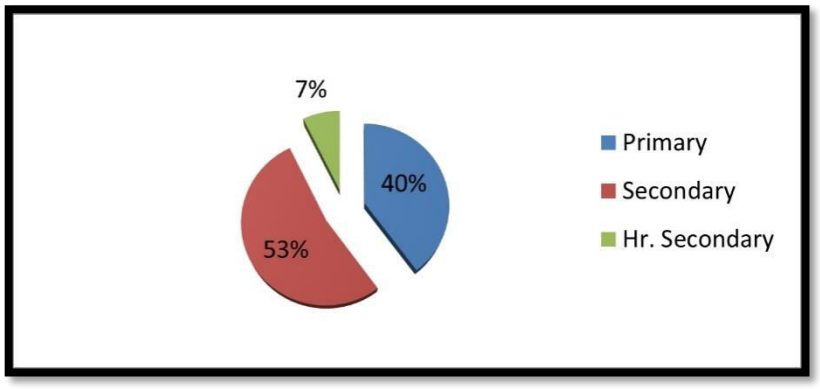
were taken into account in the study. Since majority of the villagers are engage in agriculture, poor economic and education background of the farmers were quite common. The study has shown a high percentage of students dropping out of schools in primary and secondary level.

Table 3: School dropouts at different education level

Gender	Primary	Secondary	Hr. Secondary	Total
Male	31 (14%)	39 (57%)	5 (14%)	75 (20%)
Female	18 (8%)	26 (42%)	4 (12%)	48 (14%)
Total	49 (11%)	65 (50%)	9 (13%)	123 (17%)

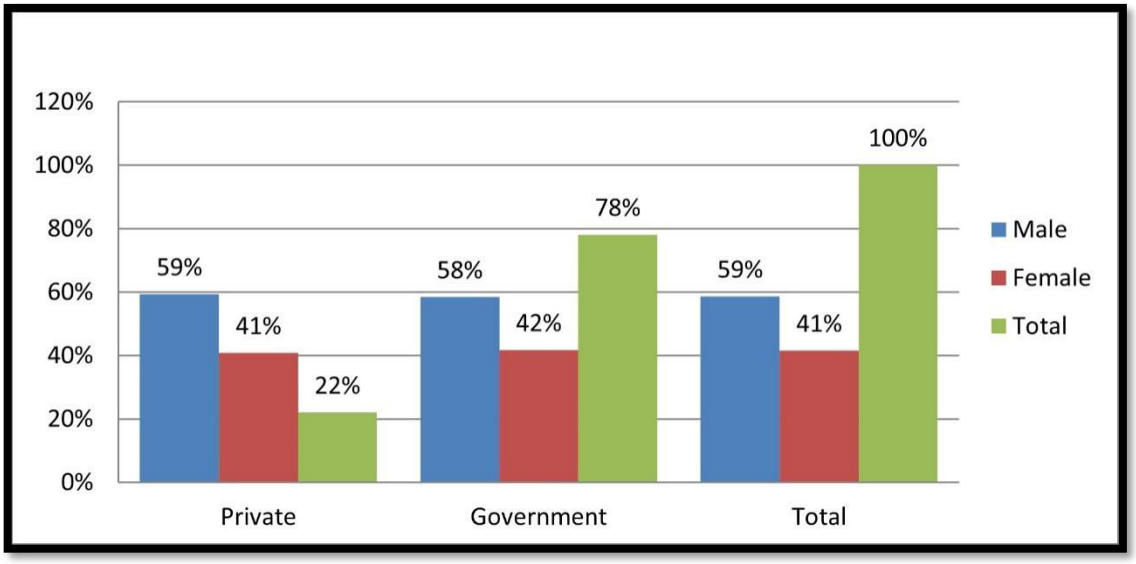
Percentage of school dropouts to total students' enrolment in the parenthesis

Figure 4: School Dropouts at different education level



The dropout percentage to the current students' enrolment (in Table 3) was found to be highest at secondary level, then primary and Hr. Secondary level respectively. The male dropout percentage was 20% and 14% for female with respect to the total number of students presently enrolled in educational institutions. However, it should be carefully noted that, while the total number of students was accounted for the academic session of the survey period, school dropouts were accounted under the conditions mentioned above and was not restricted to the then academic session. From Figure 4, it was found that, out of the total number of dropouts, 40% dropouts were from primary education level, 53% from secondary and 7% from hr. secondary level.

Figure 5: Percentage of drop outs in Government and Private institution



In Figure 5, it was found that the female dropouts in both government and private schools were lower than the male dropouts. The data also indicated that school dropouts are more common in government institutions as compared to private institutions. Out of the total dropouts, 78% were from government schools and 22% were from private schools. Given the fact that the study was carried out in rural area of Nagaland, predominantly an agrarian economy, the reasons for more dropouts in government schools could be the negligible condition of the government schools as observed during the survey and as per the remorse expressed by most parents in the study area. Dr. B. R. Prasad Reddy in his research paper, "A Brief Review on Tribal Education in India"(2021), also concluded that irregularity of the teachers in school and lack of adequate infrastructure were big problems in imparting education to tribal children. The passed percentage of High School Leaving Certificate (HSLC) for the academic session 2022-23 shows huge disparity between government institutions and private institutions. The HSLC passed percentage was recorded as 49.13% for government schools and 91.15% for private schools(Government of Nagaland, 2023).

d) Monetary Value of Shifting Cultivation as determinant of Expenditure on Education.

Shifting cultivators are mostly engaged in farming activities throughout the year and have less chances of earning significant income from other sources. Most of their resources, time and energy are invested in their fields with little or no direct cash flowing from it. Though it may be a justifiable and sustainable form of economic activity from their traditional way of life, there is no guarantee that their children's generation will sustain through the same means, unless the monetary worth of shifting cultivation positively contributes to household expenditure on education. Therefore, in this study, families'

expenditure on education was regressed on monetary value of shifting cultivation along with other household attributes such as age of the household head, household size, number of students, etc.

Table 4: Tobit Regression results for determinants of Expenditure on Education

Independent Variables	Primary	Secondary	Hr. Secondary	College & Above	Overall
	Coef.	Coef.	Coef.	Coef.	Coef.
Ln_income	.05364	.06515	.05718	.3865	.11813
No.of_stds	.21847***	.61455***	.41131***	.97252***	.44369***
Hh_size	.30425***	.06676	-.09987	-.18885	.16684***
Hh_age	-.03296***	.01255	.02120*	.03480	-.02900***
Primary	.27077	.18808	.42178	-1.69569**	-.29700
Secondary	.56268**	.37405	.459532	-.23387	-.24091
Hr. sec	.27453	.54800	.03565	-.41473	-.23768
College & above	1.4342*	-10.4163	-6.16533	1.5777	.49059
Selfemp_business	.38683*	.19592	-.05896	.54793	.29181
Salaried	.00877	-.17578	0	1.53493**	.35450*
Pseudo R2	0.2408	0.1369	0.1056	0.1099	0.2071
Observations	255	255	255	255	255

***p<.01, **p<.05, *p<.1.

Tobit regression, also known as censored regression model was used and the results are shown in Table 4. The regression result revealed that as number of students' increases by one unit, expenditure on education significantly increases by 21%, 61%, 41% and 97% at primary, secondary, hr. secondary and college & above level respectively. Household size was found to be significant only at primary level and overall education expenditure where the coefficients were .3042 and .1668, which means that with one unit increase in household size, expenditure on education increases by 30% and 16% for primary and overall education expenditure respectively. The age of the household head had negative influence on education expenditure. With one year increase in the age of household head, expenditure on education reduces by 3% at primary level and reduces the total expenditure on education by 2%. Education levels of the household heads were statistically significant only for primary and college & above level. Household heads with primary education negativelyaffect education expenditure for college & above level as compare to the illiterate household heads. For primary level education expenditure, household heads with secondary education were found to be spending 56% more than households headed by illiterates.The statistical insignificance of education level of household heads as a

determining factor of expenditure on education of the family is possibly because majority of the household heads were more or less illiterate in the studyarea, such that 29.41% of the household heads never attended schools, 39.61% attended till primary level, 26.27% till secondary, 3.92% till hr. secondary and only 0.78% in college & above level as per the survey.Employment types of the household heads were statistically insignificant for most of the education level. Household heads that are self-employed in business spent 38% more at primary level in comparison to household heads who are self-employed in agriculture. As compared to self-employed in agriculture, it was revealed that salaried household heads spend two times more for primary level and 35% more for college & above level.Although, the coefficient value was .1181for monetary value of shifting cultivation, it was not significant at any level of confidence. This means that the money value of shifting cultivation, no matter how high or low it is, has no influence on education expenditure of the household. In other words, monetary worth of shifting cultivation does not determine the level of families' expenditure on education. Thus, it is imperative to state that, to improve the level of families' expenditure on education and further their standard of living

4) Suggestions and Conclusion

According to the result of the study, it is clear that income from or monetary value of shifting cultivation, in any manner, has no significant influence on the level of education expenditure of the families of shifting cultivators. It is therefore imperative to state that, in order to increase the level of families' expenditure on education and to ensure their children with good education and better future, shifting cultivators should give more importance to other productive economic activities with potentially good returns, when at the same time improvising their farming practices in which they are most efficient.

Efforts must be made both by the households and government to improve the living standard of those cultivators so that they do not spend all their resources and time in farming. Unlike the findings of other existing literatures, where the levels of education of the household heads and the types of employment of the household heads had significant positive influence on education expenditure of the family (Bayar & İLhan, 2016; Karaaslan & Tekmanli, 2022; Tilak, 2002), the present paper revealed that education and employment types of household heads have no significant influence on education expenditure. The study showed that a huge percentage of current students from the survey, were enrolled at primary level and a relatively low percentage of students in the subsequent higher levels of education. This fact, in many aspects, is of great concern for the community and the individual households alike and needs genuine attention to increase students' enrolment at higher levels of education. From the study, it was also clear that large number of students are dropped out of schools in their early stages of school due to varyingreasons, thus the policy makers should take into account the reasons

of such behaviors, be it economic or social, and likewise make policies that effectively deal with such problems. Education, which is of great importance must be given due attention and better policies should be formulated to ensure that the upcoming generation is secured with sufficient human and natural resources. Since the study was strictly restricted to activities of shifting cultivation, there is huge scope open for further study on factor/factors that determine best the level of education expenditure of households in those villages, not only to increase its expenditure but also to ensure that desired and suitable education in provided for all and to all.

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