International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 24s, 2025
https://theaspd.com/index.php

Economic Impact And Gender Empowerment Through Sericulture: A Case Study Of Aibawk Circle, Aizawl, Mizoram

Dr. Naorem Bobby Singh[1*], Dr. Maisnam Sandhyarani Devi[2], Nirupama Seram[3], Mr. Kshetrimayum Dilip Singh[4]
[1*]Assistant Professor Department of Geography and Resource Management Mizoram University
[2]Independent Researcher, Former Research Scholar, Department of Geography, Jamia Millia Islamia
[3]Research Scholar Department of Geography and Resource Management Mizoram University
[4]Research Scholar Department of Geography and Resource Management Mizoram University

Abstract:
Sericulture, rearing of silkworm and planting of mulberry have great potential to uplift the rural economy in Mizoram, especially in ecologically favorable areas of Aibawk Circle in Aizawl district. Although sericulture in Mizoram could diversify income and empower women, this practice is on a declining trend, with most families dropping out of the system on account of systemic difficulties. This paper fills in an important research gap by looking at not only the economic aspect of sericulture but also the gender aspect and sustainability in a transitional rural economy. Purposive sampling was used to carry out household surveys in 5 villages in Aibawk Circle. Data analysis was performed by descriptive statistics and multinomial logistic regression. The results indicate that even though sericulture requires additional income, helps in resilience, and involves both males and females, it has a marginal economic impact. The social diversities of women are extensive in the labour-intensive activities, but there is no empowerment in their decision-making. The main obstacles are the lack of access to mulberry leaves and the low prices of cocoon, which discourage families. The findings suggest that sericulture has the potential to be a more viable livelihood practice, provided structural constraints are mitigated and this has implications for the policy of rural development and empowerment programs targeting women in Mizoram.
Keywords: *Sericulture, Rural livelihoods, Gender empowerment, Household income, Sustainable development*

1. INTRODUCTION:

Sericulture, the process of cultivating mulberry plants and rearing silkworms, has a big potential in the livelihood of the rural people in Mizoram. The condition of the state is hilly, the climate is good with high altitude and fertile soil, which provides a perfect agro-ecological environment to various types of silkworms, such as mulberry, eri, muga, and oak tasar (ICAR, 2023; Sericulture Department, Mizoram, 2021). Furthermore, sericulture is aligned with the state goals to increase the rural income, create agro-based jobs, and advance the technical capacity with the help of such institutions as the Sericulture Training Institute at Zemabawk (Sericulture Department, Mizoram, 2021; India Brand Equity Foundation [IBEF], 2017). Irrespective of this possibility, the industry continues to experience challenges, most notably the lack of productivity, caused by a lack of technological application, i.e., integrated pest management and nutrient management (Parameswaranaik et al., 2019). There is also the gender aspects of sericulture that are not thoroughly investigated. The level of women's involvement in sericulture is high all over the world and in some parts of India, but women are not involved in making decisions or their contributions to household empowerment are minimal (Aslam et al., 2019; Eswarappa, (2013). Although women are the main focus of agricultural and artisanal livelihoods in Mizoram, such as sericulture, there are few empirical studies to record this intersection. The study of Mizoram has predominantly been on technological adoption, such as connections between socio-economic forces, contact of extension, and cocoon yield (Lalnunzira and Singh, 2018). Nevertheless, few in-depth studies exist that cover the socio-economic relations of sericulture, particularly why it is abandoned and how it is related to the gender factor and household income. Moreover, the context-specificity of the local setting has been minimally addressed, e.g., the distinction between active and abandoned sericulture practices at village levels. This paper will address the following gaps: (1) to study the economic impacts and sustainability of sericulture and (2) to study gender roles/empowerment in practice.

2. Study Area

The Sericulture industry of Mizoram is organized into 22 sericulture circles, each having a specific geographical and ecological orientation. These circles are overseen by the state government, through its Department of Sericulture, to increase production, offer training, and market connections. The circles are distributed throughout the district of Mizoram. Aizawl district is the Focus of circles, and there are four circles: Aizawl North Circle, Aizawl South Circle, Aibawk Circle and Darlawn Circle. The study area was Aibawk Circle, which consists

of six (6) villages under this circle, which are Chawilung, Lamchhip, Muallungthu, Samlukhai, Phulpui and Maubuang. Among these six (6) villages, five (5) villages were utilised in data collection, namely, Chawilung, Lamchhip, Muallungthu, Samlukhai and Maubuang (Fig. 2).

a. Cocoons in Metamorphose Stage

b. Mulberry Leaves

c. Sericulture Farming House

d. Eri Food (Castor Leaves)

Fig. 1: Silk Farming: From Plants to Cocoon Production

2.1 The rationale for the choice of the AIBAWK circle

Sericulture is still practised on a small scale in the Aibawk Circle of Mizoram, although it was slowly fading away in most rural regions of the state, and almost half of all the practising sericulturists have already dropped out. This peculiarity is why Aibawk Circle will be an interesting case study. The study, by concentrating on this circle, provides the issues and conditions that cause abandonment and the reasons that lead to persistence, which adds insights regarding the economic aspect, gender roles and sustainability of sericulture in a transitional setting (Fig. 1).

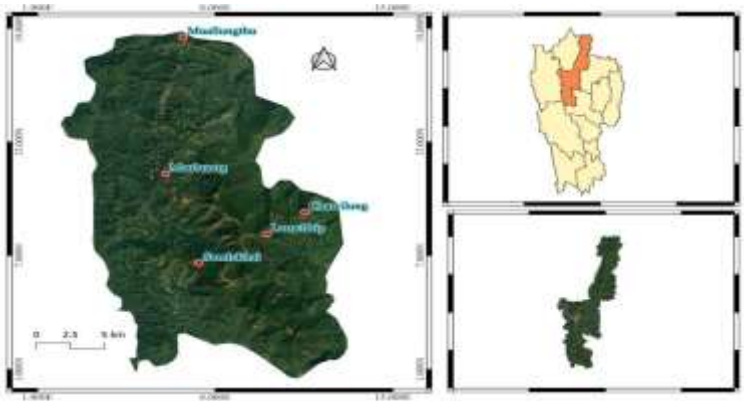

Fig.2: Study Area Map (Aibawk Circle)

3. Objectives

i. To find out the economic effects of sericulture on the household livelihoods in Aibawk Circle, Aizawl, Mizoram.
ii. To investigate gender roles and empowerment related to the involvement in sericulture.
iii. To examine the association between education and income contribution of sericulture through multinomial logistic regression.

4. DATABASE AND METHODOLOGY

The current research relies on field information gathered mainly from household surveys. The Aibawk Circle, out of the four sericulture circles within Aizawl District, was deliberately chosen as the study area. A field investigation was conducted on five villages, namely Samlukhai, Muallungthu, Chawilung, Lamchhip and S. Maubuang. A purposive sampling technique was adopted and the villages were chosen that either practised sericulture actively or had recently abandoned the practice. In these villages, an exhaustive method of enumeration was done and all households of sericulture were identified. Overall, 21 households practicing sericulture were sampled. The fieldwork was carried out between 10th October and 7th November, 2024. The data were collected using face-to-face interviews using a structured questionnaire that was given to the household heads or those who were informed. In the case of discontinued households, separate questions were used to record the time of last involvement in sericulture and the reasons for dropping out. The data collected were processed systematically, coded and analyzed. The presentation of results is in the form of tables, charts, and graphs. Measures like averages, standard deviation, and percentages were used as standard descriptive statistics in summarizing household characteristics and tendencies. A multinomial logistic regression was used to determine the determinants of household reliance on sericulture, with a specific focus on the role of educational attainment and other socio-economic variables. The secondary sources used to provide the context and support analysis were government reports, published and unpublished records, journals, books, and online resources to supplement the primary survey.

5. RESULTS AND DISCUSSION

5.1 Profile of respondents

Table 1 shows the socio-demographic profile of the 21 households that practice sericulture in Aibawk Circle. Gender-wise, the male population is higher at 57.14 per cent, whereas the female population is comparatively lower at 42.86 per cent, indicating fair representation of both sexes in activities related to sericulture. The age-wise distribution reveals that the highest proportion of respondents (47.62 per cent) belongs to the 21-40 years age group, showing that most respondents are economically active and working-age population. It is followed by 28.57 per cent in the 41-60 age group, 19.05 per cent in the 61-80 age group and with only 4.76 per cent below 20 years. The trend indicates that the middle-aged adults are the driving force behind sericulture practices, with the participation of the youth being low. In terms of education, most of the respondents (47.61 per cent) have completed high school, 38.09 per cent have attained up to middle school, 9.52 per cent have ended up with primary education, and a small percentage (4.76 per cent) have completed higher secondary. This explains that most of the respondents engaged in sericulture had a moderate level of educational attainment. Family structure-wise, joint families are predominant (57.14 per cent) over nuclear families (42.86 per cent), implying that the extended family systems remain significant in rural Mizoram, which could also enable the collective integration in the sericulture activities. The distribution of income reveals that the majority of the respondents belong to the middle-income groups. The highest proportion (33.33 per cent) is in the ₹ 400,001-500,000 annual income group, and the second, with 23.81 per cent is in the ₹ 200,001-300,000 group. The lowest income, below ₹ 100,000 per year, makes up only 4.76 per cent. of the respondents. This allocation implies that even though sericulture is associated with fairly stable rural incomes, these incomes are not broadly spread and the majority of the households tend to be at fairly high levels of income as opposed to greater prosperity.

In general, it reveals that sericulture in Aibawk Circle is mainly done by middle-aged men and women who reside in moderate levels of education in joint-family structures, with their incomes concentrated in middle-income levels, which makes it a significant but auxiliary activity to livelihood.

Table1: Profile of the Respondents

Variables	Frequency	Percentage
Gender Wise Respondents		

Male	12	57.14
Female	9	42.86
Age		
>20	1	4.76
21 - 40	10	47.62
41 - 60	6	28.57
61-80	4	19.05
Educational Status		
Primary	2	9.52
Middle School	8	38.09
High School	10	47.61
Higher Secondary	1	4.76
Type of family		
Joint	12	57.14
Nuclear	9	42.86
Income		
Less than 100000	1	4.76
100001-200000	3	14.29
200001-300000	5	23.81
300001-400000	3	14.29
400001-500000	7	33.33
500001-600000	2	9.52

Source: Primary Survey, 10th October to 7th November, 2024

5.2 Economic Impact of Sericulture on Household Livelihoods

Sericulture in Aibawk Circle has become an additional source of income which is providing rural households with economic and social benefits. The practice is important in the livelihoods of households in the sense that it helps to diversify household income, offers seasonal jobs, and provides limited though meaningful empowerment. The survey indicates that prior to the adoption of sericulture, 85.7 per cent of households relied on agricultural activities as the primary source of household income: wage labor (9.5 per cent) and handicraft (4.8 per cent) were secondary sources of household income (Table 2). Since the introduction of sericulture, 16 households (76.2 per cent) claimed that less than 25 per cent of their total income came as a result of the practice, with only 2 households (9.5 per cent) claiming between 25-50 per cent and 3 households (14.3 per cent) had increased their household income up to 51-75 per cent through this activity. The results indicate that, though sericulture is not the main source of income, it gives the households a supplementary source of revenue that minimizes their total reliance on traditional agriculture and labour-intensive jobs. Sericulture has increased the stability of household income in terms of finances as it provides periodic returns in line with the rearing of silkworms. This additional income helps in meeting some basic requirements like education, healthcare and other small household investments of the children. Also, sericulture activities have provided 2-3 family-based jobs per household, which is evidenced by the fact that it has involved underemployed individuals, mainly women. Nevertheless, the contribution is low. The farmers are limited by an insufficient supply of mulberry leaves, small rearing rooms and unreliable prices of cocoon, which limits the potential of sericulture as a huge livelihood source. Aibawk Circle households are experiencing an income disparity between both projected and realized returns of sericulture, and therefore, require other complementary activities to maintain livelihoods. Nevertheless, sericulture is an economic activity that has helped rural economies to be more resilient in terms of diversifying the income of households. Women are also employed in fruitful activities and families are connected to government cooperatives to ensure that they have a guaranteed market. Sericulture may change to a more sustainable and reliable livelihood option in the area, provided the limitations in the form of scarce inputs and reduced market prices are resolved (Aslam et al., 2019).

Table 2: Perception of Respondents on Household Income

Variables	Frequency	Percentage
Source of income before sericulture		

Agriculture	18	85.7
Wage labour	2	9.5
Handicrafts	1	4.8
Income Contribution from Sericulture to Household Income		
Less than 25%	16	76.2.
25%-50%	2	9.5
51-75%	3	14.3

Source: Primary Survey, 10th October to 7th November, 2024

5.3 Employment Opportunities

Table 3 presents the gender distribution of activities related to sericulture among 21 respondents. It is evident that silkworm rearing is the most common activity, accounting for 50 per cent of male and 44.44 per cent of female participation, collectively making up 47.62 per cent of total involvement. Mulberry cultivation is entirely carried out by females (33.33 per cent), suggesting a gendered division of labour in certain sericultural tasks. Similarly, cocoon harvesting (16.67 per cent males and 11.11 per cent females) and subsequent activities such as silk processing (8.33 per cent males only) and selling products (8.33 per cent males only) show limited participation. On average, male respondents are engaged in two activities, while female respondents engage in 1.5 activities, with a combined mean of 3.5 activities. The standard deviation indicates greater variation in male participation (2.10) compared to females (1.64), reflecting broader male involvement across different stages of sericulture.

The results suggest that although both men and women are engaged in sericulture, certain tasks, such as mulberry cultivation, are more female-dominated, while activities like silk processing and product selling are undertaken by men. This pattern aligns with earlier studies highlighting gendered roles in sericulture, where women predominantly participate in labor-intensive activities, while men often control tasks associated with commercialization and technical processes (Eswarappa, 2013).

Table 3: Gender Roles and Empowerment through Sericulture

Gender	Male	Percentage	Female	Percentage	Total	Percentage
Silkworm rearing	6	0.50	4	44.44	10	47.62
Mulberry cultivation	0	0.00	3	33.33	3	14.29
Cocoon Harvesting	2	16.67	1	11.11	3	14.29
Silk process	1	8.33	0	0.00	1	4.76
Selling products	1	8.33	0	0.00	1	4.76
All	2	16.67	1	11.11	3	14.29
Total	12	100.00	9	100.00	21	100.00
Mean	2		1.5		3.5	
Std Dev	2.10		1.64		3.33	

Source: Primary Survey, 10th October to 7th November, 2024

5.4 Household Participation in Sericulture

The concept of household involvement and labour in sericulture is important to determine its contribution to rural livelihoods and employment. This analysis indicates the socio-economic significance of sericulture as an additional source of income by discussing the level of family participation, seasonality of labour precision, and utilisation of hired labour. These assessments are commonly highlighted in the studies of rural development to unveil the livelihood security and labour relations (Atree & Choudhary, 2025; Rao and Nagabhushanam, 2017). The household participation analysis in the study area shows that, on an average, 2 to 3 members of each household are involved in the sericulture-related activities (Mean = 2.48; SD = 0.81), which means that sericulture is not practiced as an individual occupation or enterprise but as a family activity. Additionally, it has been found that employment opportunities in sericulture are purely seasonal with all the households (100) reporting that it does not offer employment throughout the year or permanently (Mean = 1.00; SD = 0.00). This underscores the reliance of homes on other additional sources of income in off-seasons. Moreover, Table 4 highlights the number of hired labour is insignificant in sericulture since only a single household (4.8 per cent) has hired labour whereas the large proportion (95.2 per cent) has not hired any labour (Mean = 0.05; SD = 0.22). Combined, the findings

indicate that sericulture in the region under study is mostly a family, labour-intensive and seasonal form of livelihood, as an income supplement and not a source of sustainable or commercial form of employment.

Table 4: Household Participation in Sericulture Activities

Variables	Frequency	Percentage	Mean	Std. Dev.
Household Member				
Only1	1	4.8		
1-2	12	57.1		
3-4	5	23.8		
More than 4	3	14.3		
Total (N=21)	21	100.0	2.48	0.81
Seasonal vs. Year-round Employment Availability in Sericulture				
No, it is seasonal	21	100.0		
No, employment opportunities are inconsistent	0	0		
Yes	0	0		
Total (N=21)	21	100.0	1.00	0
Use of Labours in Sericulture Activities among Households				
Yes	1	4.8		
No	20	95.2		
Total (N=21)	21	100.0	0.05	0.22

Source: Primary Survey, 10th October to 7th November, 2024

Note: *Mean and Standard Deviation (SD) are calculated as* ***weighted measures*** *based on coded categories and their frequencies. For example, "Only 1 member" = 1, "1–2 members" = 2, "3–4 members" = 3, and "More than 4 members" = 4. The weighted mean was obtained using* $\bar{x} = \frac{\Sigma(xi \cdot fi)}{\Sigma fi}$*, and SD was derived from the corresponding variance.*

5.5 Women's Decision-Making Abilities

Table 5 shows the perception of the respondents about the issue of whether sericulture has been able to enhance the decision-making capacities of women in households. The results indicate that most households (15 households) representing 71.4 per cent did not experience any substantial change in women's decision-making. Further, 6 households (28.6 per cent) expressed the question to be irrelevant in their case. Notably, none of the respondents mentioned that there have been improvements in women's decision-making to certain extent or significantly (Yadav & Jadhav, 2017). These findings point to the fact that sericulture has minimal or no effect on improving the role of women in household decision-making. The prevalence of the no significant improvement group indicates the underlying inequalities in gender participation in decision-making systems, which overlook the idea that economic involvement in sericulture has not yet resulted in empowering more women at the household level. The relatively large percentage of not applicable answers also suggests that, in certain families, women might be significantly deprived of decision-making irrespective of their occupational involvement.

Table 5: Perception of Respondents on Women's Decision

Variables	Frequency	Percentage
Perceive the Empowerment of Women in decision-making due to Sericulture		
Yes, to some extent	1	4.8
No, not significantly	11	52.4
Not applicable	9	42.9
Improved Women's Decision Making		
No, not significantly	15	71.4
Yes, to some extent	0	0
Yes greatly,	0	0
Not applicable	6	28.6

Source: Primary Survey, 10th October to 7th November, 2024

5.6 Challenges in Sericulture

Sustainability of sericulture has been identified as a significant concern in rural development, especially due to the prospects it has in offering additional income to the marginal and small farmers and also the involvement of women and disadvantaged groups in productive activities (Choudhury and Baruah, 2017; Singh and Mahapatra, 2019). The feasibility of sericulture as a means of livelihood, however, highly relies on the availability of raw materials, market factors, infrastructural facilities and institutional facilities.

Table 6 outlines the major challenges experienced by households that are involved in sericulture. Out of the surveyed households, 38 per cent (8 households) cited a shortage of mulberry leaves as a significant challenge. The fact that the leaves of mulberry are essential in the feeding of silkworms means that the productivity will be directly decreased by the lack of the said leaves and this will also decrease the quality of the silk. More importantly, low prices of silk products were the most serious problem affecting 62 per cent (13 households) of them. This implies that in a situation where production inputs are present, low returns in the market will invalidate household motivation and economic sustainability. Interestingly, none of the respondents complained of the lack of training, market inaccessibility, or silkworm diseases.

Table 6: Challenges Faced in Sericulture by Household

Type of Challenges	No. of Households	Percentage
Lack of Training	0	0
Diseases Affecting the Silkworm	0	0
Poor Market Access	0	0
Low Price	13	62.0
Lack of Mulberry Leaves	8	38.0

Source: Primary Survey, 10th October to 7th November, 2024

The results highlight that disease and lack of knowledge are not the main constraints to the sustainability of sericulture in this region, but structural ones, specifically fluctuating markets and insufficient feed sources. These issues directly limit the household income and, thus, sericulture is a very shaky source of livelihood.

6. REGRESSION ANALYSIS

According to the case processing summary (Table 7), most respondents (76.2%) earn less than 25% of their household income from sericulture, while only 9.5% fall in the 25–50% category, and 14.3% earn between 51–75% of their income from this activity. It is shown that the distribution of sericulture represents a supplementary occupation of the majority of farmers, not a primary source of income (Aslam et al., 2019; Khan, et al. 2022).

A multinomial logistic regression was employed to investigate the role of educational attainment in the percentage of income earned through sericulture. As the outcomes of the Likelihood Ratio Tests (Table 10) show, there is a statistically significant influence of education attainment on the dependent variable (kh2 = 9.787, df = 2, p = 0.007). This implies that education acquired by the farmers is a significant factor influencing the amount of revenue they can earn through sericulture which is in line with research on how education and agricultural productivity and technology are related (Asfaw and Admassie, 2004; Schultz, 1981).

Table 7: Case Processing Summary

		N	Marginal Percentage
Total Income Percentage from Sericulture	less than 25%	16	76.20%
	25%-50%	2	9.50%
	51%-75%	3	14.30%
Valid		21	100.00%
Missing		0	
Total		21	
Subpopulation		20a	

a The dependent variable has only one value observed in 20 (100.0%) subpopulations.

Table 8: Model Fitting Information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	29.783			
Final	0	29.783	12	0.003

Table 9: Pseudo R-Square

Cox and Snell	0.758
Nagelkerke	1
McFadden	1

Table 10: Likelihood Ratio Tests

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	.000a	0	2	1
Educational Attaintment	9.787	9.787	2	0.007
Age Group	.000a	0	2	1
Income Level	4.949b	4.949	2	0.084
Family Member Involve	.000a	0	2	1
Duration	6.140b	6.14	2	0.046
Technical Assistance or Training	.000a	0	2	1
The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.				
a The log-likelihood values are approaching zero. There may be a complete separation in the data. The maximum likelihood estimates do not exist.				
b Unexpected singularities in the Hessian matrix are encountered. This indicates that either some predictor variables should be excluded or some categories should be merged.				

Table 11 : Parameter Estimates

Total Income Percentage from Sericulture		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Less than 25%	Intercept	-44.225	353877.7	0	1	1			
	Educational Attainment	-2.015	32197.51	0	1	1	0.133	0	.b
	Age Group	-1	16078.63	0	1	1	0.368	0	.b
	Income Level	-0.516	20952.35	0	1	1	0.597	0	.b
	Family Member Involved	0.102	16862.41	0	1	1	1.107	0	.b
	Duration	-1.594	29054.33	0	1	1	0.203	0	.b
	Technical Assistance or Training	37.721	101430.9	0	1	1	2.41E+16	0	.b
25%-50%	Intercept	376.9	452733.3	0	1	0.999			
	Educational Attainment	-207.131	47682.65	0	1	0.997	1.11E-90	0	.b
	Age Group	-27.945	84636.18	0	1	1	7.30E-13	0	.b
	Income Level	-33.738	21741.86	0	1	0.999	2.23E-15	0	.b
	Family Member Involved	20.562	45987.89	0	1	1	8.51E+08	0	.b
	Duration	72.698	88379.1	0	1	0.999	3.74E+31	0	.b
	Technical Assistance or Training	-62.433	352176.4	0	1	1	7.68E-28	0	.b
a The reference category is: 51%-75%.									
b Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.									

The model significantly improves over the intercept-only model (Chi-Square = 29.783, p = 0.003) and shows strong explanatory power, with pseudo R-squares indicating an excellent fit (Cox & Snell = 0.758, Nagelkerke = 1, McFadden = 1) (Tables 8 & 9). However, the subpopulation data show limited variability, as only one value was observed for most cases (Table 9).

Further understanding can be obtained from the parameter estimates (Table 11). These intercept terms, however, were not usually statistically significant ($p \approx 1.000$), which is not unusual as intercepts are not substantively

interpretable in multinomial regression (Hosmer, Lemeshow, and Sturdivant, 2013). The predictor variable is Educational Attainment, the coefficient for the less than 25% income value was B = -2.015, Exp(B) = 0.133. This implies that an increased educational level reduces the chances of the farmers getting a very small percentage of their income through sericulture. Practically speaking, the more educated farmers will be less inclined to take sericulture just as a second occupation and more inclined to obtain considerable revenues out of it. It should be noted, however, that the coefficient was not significant (p = 1.000). This insignificance could be explained by the small number of respondents in certain categories (e.g. only two representatives of the 25-50 per cent range of income and three of the 51-75 per cent range of income). Minor cell sizes reduce the strength of regression models in identifying true effects resulting in overstated standard errors and unsupported estimates (Menard, 2002). The results are aligned with the previous studies indicating that education is an important factor in increasing the ability of farmers to switch towards better sericulture methods, resource management, and market opportunities (Chinnasamy & Gopalswamy, 2017; Dutta and Devi, 2013). Education is not only empowering the farmers with information on scientific ways to rear but also enhancing their capacity of adopting sericulture to the diversified livelihood strategies (Rao, 2001).

Meanwhile, the existing findings should be approached with skepticism. Although the general model validates a meaningful role of education, the parameter-level findings did not have any significance on some of the categories, mainly because there is less sampling of the respondents based on middle income groups. This is based on the structural reality of sericulture in the study region, in which majority of farmers earn only some slight percentage of their income out of the activity, and extremely few can attain moderate or high degrees of reliance on it. The same small sample size problems have been observed with regressions of studies of rural livelihood (Gujarati & Porter, 2009). However, the direction of the effects is as expected in the theory; higher education decreases the likelihood of low reliance in sericulture meaning that education plays a positive role in reinforcing sericulture as a sustainable livelihood basis.

7. CONCLUSION

It concludes that even though sericulture has the potential to develop the rural regions, the development depends on solving the systemic issues that are currently hindering its development. Sericulture is another source of income that enables many households to diversify and thus, have an alternative source of income. Women play an important part in the sericulture process and participate. Enhancing the availability of the current technology, offering consistent and sufficient assistance to the farmers and making sure that the market prices of the silk products are reasonable are some of the key steps towards the revival of the industry. Moreover, society needs to be more gender empowered by promoting sericulture; this must involve a change of societal norms and increased activities to empower women in the decision-making process in their homes. Through the appropriate investments and policy mechanisms, sericulture may become one of the pillars of economic, gender and sustainable development in rural Mizoram.

REFERENCES

1. Asfaw, A., & Admassie, A. (2004). The role of education on the adoption of chemical fertiliser under different socioeconomic environments in Ethiopia. *Agricultural Economics, 30*(3), 215–228. https://doi.org/10.1111/j.1574-0862.2004.tb00190.x.
2. Aslam, M., Singh, S. P., Tewary, P., Singh, P. K., & Sahaf, K. A. (2019). Women empowerment through sericulture in Doon Valley. *Journal of Emerging Technologies and Innovative Research, 6*(5), 88–95. https://www.jetir.org/view?paper=JETIR1905J15
3. Atree, N., & Choudhary, V. K. (2025). Trends and challenges in the global silk industry: A statistical analysis of globalization effects. *Journal of Experimental Agriculture International, 47*(6), 802–809. https://doi.org/10.9734/jeai/2025/v47i63538
4. Chinnasamy, P., & Gopalswamy, S. (2017). Constraints perceived by farmers in adoption of sericulture production technologies in Jorhat district of Assam. *International Journal of Agricultural Science and Research (IJASR), 11*(2), 175–182. https://doi.org/10.24247/ijasrdec2021175
5. Choudhury, B. N., Das, S. C., Sarmah, M. C., & Ahmed, M. (2018). A study on the influence of socio-economic factors on knowledge and technology adoption of sericulture farmers of Aizawl district of Mizoram. *International Journal of Advance Research, Ideas and Innovations in Technology, 4*(3), 584–589. https://www.ijariit.com/manuscript/a-study-on-the-influence-of-socio-economic-factors-on-knowledge-and-technology-adoption-of-sericulture-farmers-of-aizawl-district-of-mizoram/
6. Dutta, A. C., & Devi, S. (2013). Constraints in adoption of recommended sericulture production technologies in Korba district of Chhattisgarh. *International Journal of Agricultural Science and Research (IJASR), 3*(4), 45–52. https://www.cabdirect.org/cabdirect/abstract/20133430246
7. Eswarappa, K. (2013). Role of women in sericulture and community development: A study from a South Indian village. *SAGE Open, 3*(3). https://doi.org/10.1177/2158244013502984
8. Government of Mizoram. (2020). *Economic survey Mizoram 2019–20*. Directorate of Economics & Statistics, Planning Department. https://dipr.mizoram.gov.in
9. Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill Education.
10. India Brand Equity Foundation (IBEF). (2017). *Mizoram state report*. https://www.slideshare.net/IBEFIndia/mizoram-state-report-march-2017

11. Indian Council of Agricultural Research (ICAR). (2023). Adoption of sericulture technologies in North East India. https://ebook.icar.gov.in/index.php/JAEM/article/view/105106
12. Khan, I., Bashir, M., Ganie, N. A., Rafiq, A., Bhat, I. A., & Dar, K. A. (2022). Study on impact of the socio-economic conditions of the sericultural farmers on cocoon production. *Biological Forum – An International Journal, 14*(4), 1153–1156. https://www.researchtrend.net/bfij/pdf/205%20Study%20on%20Impact%20of%20the%20Socio%20Economic%20Conditions%20of%20Thesericultural%20Farmers%20on%20Cocoon%20Production%20Ishfaq%20Ahmad%20Bhat.pdf
13. Menard, S. (2002). *Applied logistic regression analysis* (2nd ed.). Sage Publications.
14. Mizoram State Sericulture Department. (2021). *Empowering rural women through sericulture in Mizoram*. https://sericulture.mizoram.gov.in/page/profile
15. Parameswaranaik, J., Lalhriatkima, Manjunatha, G. R., & Sivaprasad, V. (2019). Adoption of improved sericultural technologies among farmers of Mizoram state. *Journal of Agricultural Extension Management, 20*(2), 19–29.
16. Rao, M. R. (2001). *Socio-economic aspects of sericulture development in India*. Sericulture Research & Development Institute.
17. Parameswaranaik, J., Lalhriatkima, Manjunatha, G. R., & Sivaprasad, V. (2019). Adoption of improved sericultural technologies among farmers of Mizoram state. *Journal of Agricultural Extension Management, 20*(2), 19–29.
18. Schultz, T. W. (1981). Investing in people: The economics of population quality. *University of Chicago Press.*
19. Sericulture Department Mizoram. (2021). *Mission & vision*. Government of Mizoram. https://sericulture.mizoram.gov.in/page/mission-vision
20. Yadav, U., & Jadhav, N. (2017). Empowerment of rural women through sericulture. *Environment Conservation Journal, 18*(1–2), 207–209. https://doi.org/10.36953/ECJ.2017.181228.