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THE IMPACT OF SOCIAL BARRIERS ON WOMEN'S LIVELIHOOD TRANSITION AND INCOME: EMPIRICAL RESEARCH FROM SON LA PROVINCE

Tran Thi Thanh Ha*, Duong Van Manh

Tay Bac University

*Email: *thanhha@utb.edu.vn*

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ABSTRACT

The article focuses on analyzing the intersecting impacts of social barriers on the livelihood transformation and income of women in Son La province. The research employs a mixed-methods approach, combining a quantitative survey with in-depth interviews. Results highlight a “negative synergistic effect” arising from the interaction between geographical, linguistic, and gender-institutional barriers, creating a bottleneck that makes it difficult for women to break out of low-value livelihood models. Empirical evidence shows that the gender income gap reaches 17.76%, while also revealing a paradox between high self-confidence (3.8/5) and low economic decision-making power (1.8/5) among women. In particular, the study emphasizes livelihood vulnerability, as the information-poor group can experience an income drop of up to 58.1% when facing market shocks and natural disasters. Consequently, the author proposes a synchronized system of solutions to dismantle structural barriers, enhance digital skills, and establish property rights for women. This serves as an important scientific basis for promoting substantive gender equality and sustainable multidimensional poverty reduction for ethnic minority women in Son La in the new phase.

Keywords: Social barriers, livelihood transformation, income, ethnic minority women, Son La.

1. INTRODUCTION

In the socio-economic structure of the Northwest Highlands in general and Son La province in particular, women, especially ethnic minority women are not only the anchors of the family but also the core labor force, playing a pivotal role in agricultural production and rural economic development. They serve as the most vital link in maintaining value chains, ranging from sloping land cultivation to the preservation of traditional craft villages.

However, amidst the current wave of industrialization, modernization, and the imperative for robust economic restructuring, women's livelihoods are reaching a major turning point. Transitioning from purely subsistence agricultural models to service, non-agricultural sectors, and high-tech agriculture is no longer a choice but a strategic necessity to boost income and escape the trap of sustainable multidimensional poverty.

Nevertheless, reality in Son La, a multi-ethnic locality with distinctive cultural and topographical features reveals that this transition roadmap is encountering significant resistance. Backward perceptions and deep-seated gender stereotypes regarding women's roles in the family, combined with objective educational limitations, are becoming invisible walls. These barriers not only hinder women from accessing training, technology, and capital but also undermine their adaptability to market volatility. To clarify the focus and coherence in identifying these barriers, the study focuses on addressing the following core questions: (i)

What specific social barriers (structural, cultural, and local specifics) are directly hindering the livelihood transformation of ethnic minority women in Son La?; (ii) How does the interaction mechanism between these barriers create a "negative synergistic effect" on income and livelihood vulnerability?; (iii) What comprehensive system of solutions needs to be established to remove structural bottlenecks and promote substantive gender equality in the new phase?

This article focuses on identifying and profoundly analyzing the impact of social barriers on the livelihood transformation process and economic autonomy of women in Son La province. Based on these findings, the study proposes a synchronized system of solutions to emancipate the female labor force, unblocking cognitive and policy bottlenecks to promote substantive gender equality and build a sustainable socio-economic development roadmap for highland ethnic communities in the new era.

2. LITERATURE REVIEW

2.1. Livelihood transformation and income

The transition of livelihoods from traditional methods to modern models is an inevitable but challenging process in sustainable rural development strategies. According to I. Scoones' (2015) theoretical framework [1], this process is not simply a change in occupation but also a restructuring of capital under the influence of a matrix of policies and social institutions, in which households must constantly adjust their adaptation strategies to survive. Especially in the digital age, J. J. Green (2024) [2] emphasized that transition is linked to poverty alleviation pathways through access to and application of information technology, a process that requires a breakthrough in digital skills to overcome information barriers and connect to new rural markets.

In Vietnam, the analysis of the Vietnam Women's Union [3] reflected the positive results of the "Agricultural villages responding to climate change" project in the Northwest provinces, including Yen Chau and Van Ho districts of Son La province. Through the establishment of "Farmer groups responding to climate change", ethnic minority women here have been comprehensively improved in capacity, from agroforestry and sustainable livestock farming techniques to market access and communication skills. Thanks to the guaranteed purchase connection of cooperatives, the model not only helps women change their awareness of environmental protection but also improves stable income and significantly reduces vulnerability to natural disasters.

2.2. Types of social barriers

Social barriers are not merely tangible obstacles but represent a system of informal institutions including customs, practices, and prejudices that hinder the development of individuals within a community. Theoretical frameworks from the works of N. Kabeer (2012) [4] and Jayachandran (2015) [5] have established a robust foundation regarding institutional and structural barriers.

Research by Vu (2021) [6] indicates that the social participation and voice of ethnic minority women in community meetings are very limited due to the double burden of objective barriers (gender stereotypes linking women to housework and not being listed as heads of households) and subjective barriers (low self-esteem, illiteracy, limited proficiency in the common language). These are important practical examples that help clarify the similar barriers directly hindering the process of livelihood transformation and income improvement opportunities for women in Son La province.

However, when examining the reality of Son La province a region characterized by the complex intersection of cultural value systems from the H'Mong, Thai, and Lao ethnic groups social barriers extend beyond general gender prejudice or domestic burdens. They manifest through specific customs such as strict patriarchal systems, obsolete marital practices, and linguistic isolation from the national language in highland villages.

Although previous studies have identified a broad range of barriers facing ethnic minority women, a significant research gap remains regarding the analysis of the double impact mechanism: the synergy between language (education) barriers and specific kinship cultural institutions on women's adaptability to modern livelihood models, such as community-based tourism or digital-based businesses. Notably, the lack of empirical evidence on how these social barriers directly break efforts to increase income and economic autonomy for women in Son La during the post-pandemic and digital transformation era serves as the premise for this article's focus and resolution.

2.3. Relationship between social barriers and women's income and livelihoods

The link between social barriers and women's economic outcomes is a central theme in modern development theories. The World Bank's Gender strategy 2024-2030 (2024) [7] affirms that gender equality is a core pillar for a resilient and inclusive future, in which narrowing the digital empowerment and economic empowerment gap is seen as a key solution to removing barriers to sustainable growth. B. Agarwal (2018) [8] provides new empirical evidence showing that property rights, particularly land, play a decisive role in establishing women's economic status and security; without genuine levers of property rights, simply increasing income will hardly enable them to achieve autonomy and the ability to respond flexibly to complex market fluctuations.

In Vietnam, Le and Nguyen (2000) [9] deeply analyze how family institutions and public opinion create dual pressure, making it difficult for women to optimize new livelihood opportunities. The report by Rivoal and Nguyen (2022) [10] points out that systemic barriers such as the burden of unpaid domestic work, limited access to capital, climate information and property rights (such as land) are increasing vulnerability and constraining the livelihood transformation capacity of rural and ethnic minority women. Therefore, the document emphasizes the importance of breaking down social stereotypes, improving economic autonomy and promoting gender equality as a core solution to enhance income and sustainable adaptation capacity for women in mountainous localities such as Son La province.

Although this relationship has been identified, an important research gap remains: current studies often focus on static barriers (at a single point in time) without deeply analyzing the interaction dynamics between specific cultural barriers (such as kinship customs in Son La) and income fluctuations when women participate in new economic models (e.g., agricultural e-commerce or circular economy). Particularly, the lack of indicators to measure the trade-off between opportunity costs caused by social barriers and the actual efficiency of women's income in Son La is the urgent issue this research aims to clarify.

3. METHODOLOGY

The research is conducted using a mixed-methods approach, closely integrating quantitative and qualitative analyses to ensure both objectivity and in-depth exploration of the issues.

Quantitatively: The study applies methods for collecting and processing secondary data from statistical reports and yearbooks of Son La province to analyze income fluctuations and livelihood structures among various ethnic groups (such as the H'Mong, Thai, and Lao). This data analysis helps identify the overall picture of economic gaps and deficit indicators in multidimensional poverty.

Qualitatively: This represents the core focus of the research, aiming to decode intangible social barriers. Through fieldwork and in-depth interviews conducted directly with women in local villages, the author gathers real-life accounts regarding the pressures of prejudice, domestic burdens, and the language barriers they face.

The survey sample (n=150) is highly representative of the population structure and livelihood characteristics of the Son La highlands. The prominent demographic features are as follows:

Table 1. Demographic characteristics of the survey respondents.

No.	Classification Indicator	Target Group	Quantity (n)	Percentage (%)
1	Age	Under 30 years old	60	40.0
		From 30 - 45 years old	55	36.7
		Over 45 years old	35	23.3
2	Ethnicity	Thai	70	46.7
		H'Mong	20	13.3
		Lao	30	20.0
		Other ethnic groups	30	20.0
3	Residential Area (Topography)	Highland (Steep, fragmented terrain)	75	50.0
		Lowland (Along national highways/reservoirs)	75	50.0
4	Marital Status	Married	141	94.0
		Single/Divorced/Widowed	9	6.0
5	Average Number of Children	1 - 2 children	98	65.3
		3 children or more	52	34.7
6	Primary Occupation	Purely agriculture	110	73.3
		Business/Services/Cooperatives	25	16.7
		Others	15	10.0

Source: Surveyed and synthesized by the author group

The demographic characteristics of the sample show that this group is situated at the threshold of transformation: they are young and aspirational, yet constrained by traditional agricultural livelihoods, fragmented terrain, and family burdens. This constitutes a vital empirical premise for explaining the results concerning income barriers in subsequent sections.

This study employs a targeted stratified sampling method with a sample size of n=150 subjects, ensuring topographic symmetry and representativeness of the specific ethnic structure in Son La. In qualitative research, sample size is determined by information saturation. In-depth interviews combined with surveys of 150 samples allow for the full identification of recurring barrier patterns. Furthermore, the sample size is appropriate to the available resources, ensuring sufficient depth in data collection in heavily fragmented terrains where accessing individual households is time-consuming. Data collection tools include a survey questionnaire using a Likert scale to quantify variables related to self-determination and semi-structured interview guidance to deeply explore invisible barriers through field information saturation. The data were processed using thematic coding combined with intersectionality analysis to decode the interaction between structural, cultural, and local barriers. This process establishes a robust empirical analytical framework, helping to accurately identify the negative synergistic effects that are hindering the income breakthroughs of women in highland areas.

The expert consultation method was conducted through semi-structured interviews with 10 experts selected based on criteria including high professional qualifications and at least 10 years of experience in the fields of gender equality, ethnic minority culture, or rural development in the Northwest region. This expert group included education managers, women's association officials, and local ethnic culture researchers, ensuring a deep understanding of the practical context. The consultation process played a crucial role in comparing and verifying findings from the field, thereby providing a basis for synthesizing and proposing a system of solutions that are both scientifically sound and highly feasible, appropriate to the gender and cultural characteristics of the Son La highlands.

To provide a foundation for empirical analyses, the study establishes a multidimensional analytical framework based on a systems approach. Visualizing this framework (Figure 1) clarifies the logic in deciphering the gender income gap and the shock response capacity of the study subjects and serves as a basis for proposing integrated solutions.

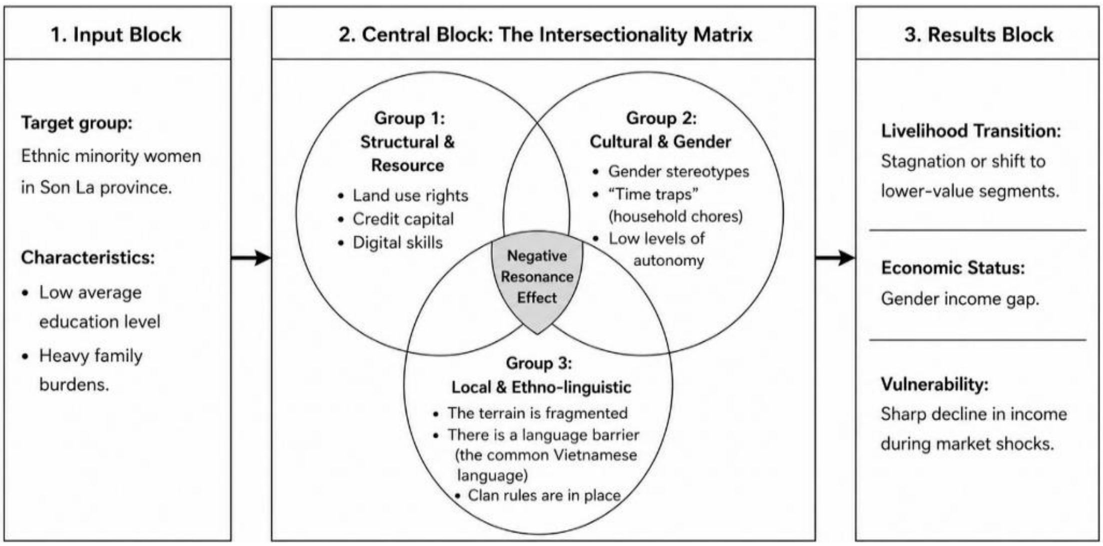

Figure 1. Framework for analyzing social barriers to livelihood transformation for ethnic minority women.

Source: Created by the authors

4. RESULTS AND DISCUSSION

4.1. The multidimensional social barrier system for women in Son La province

4.1.1. Structural and resource barriers

The severe lack of property rights and access to formal financial resources for women in the study area are core structural barriers that perpetuate the disadvantaged status of highland women in economic activities.

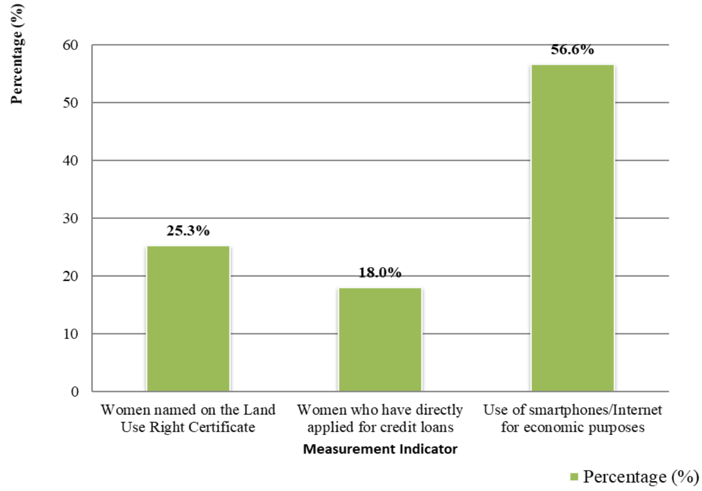

Figure 2. Status of structural and resource barriers (%).

Source: Surveyed and synthesized by the author group

First, regarding property ownership: Only 25.3% of women have their names on Land Use Right Certificates. In rural mountainous contexts, land is the most vital means of production and collateral. The fact that nearly three-quarters of women are not named on the Land use Certificate directly strips them of their property autonomy, making it difficult to decide on large-scale production plans or land-use conversion.

Second, regarding access to credit capital: The percentage of women who have directly applied for credit loans is even lower, reaching only 18.0%. This reflects a reality where, even with a need for livelihood investment, women must rely on their husbands or male family members to access formal capital flows. This limitation not only reduces economic self-determination but also leads to a lack of financial management skills and experience in working with credit institutions.

Third, regarding digital transformation in the economy: A more positive signal is that 56.6% of women have begun using smartphones and the Internet for economic purposes, such as market price research or buyer contact. However, nearly 44% of women remain outside the flow of the digital economy. This group is at the highest risk of being left behind as traditional trade channels in the highlands are gradually replaced by online connection platforms.

Figure 2 reveals a paradox: while women demonstrate a strong spirit for technological application (56.6%), they lack the most critical economic leverage land and capital (both under 25.3%). This confirms that to achieve sustainable multidimensional poverty reduction for women in Son La, support solutions must go beyond skill training to dismantle bottlenecks in property ownership and gender-specific credit mechanisms.

4.1.2. Cultural and gender barriers

The survey results reveal profound internal conflicts in the socio-economic lives of women in Son La, where domestic burdens and a lack of decision-making power act as a dual barrier to sustainable development.

Table 2. Status of cultural and gender institutional barriers.

No.	Measurement Indicator	Unit	Result (Average/ Frequency)	Note
1	Educational level (Most common)	Level	2.9	1. Primary; 2. Lower Secondary; 3. Upper Secondary; 4. Higher Education
2	Time spent on housework and family care	Hours/day	5.2	
3	Decision-making power in economic activities	Score (1-5)	1.8	1: Low - 5: High
4	Level of confidence when transitioning to new livelihood models	Score (1-5)	3.8	1: Low - 5: High

Source: Surveyed and synthesized by the author group

The “Time Poverty” Trap: Data shows that women spend an average of 5.2 hours per day on housework and family care. This is a significant figure when added to the typical 8-10 hours of field labor. Shouldering the bulk of informal, unnamed tasks deprives women of opportunities for rest, learning new techniques, and participating in community activities, directly undermining their productivity and mental health.

Misalignment Between Aspiration and Actual Power: A particularly striking point is the sharp contrast between the Level of Confidence (3.8/5) and Economic Decision-making Power (1.8/5). The 3.8/5 index for confidence indicates that highland women have a very high spirit for progress; they are ready and believe in their ability to transition to new livelihoods. However, the decision-making index is at a record low of 1.8/5, reflecting a reality where men still hold absolute dominance in major household economic decisions, such as investments, loans, and asset sales. This disparity demonstrates the persistent existence of the “favoring males over females” ideology and outdated gender institutions. Even when women have ideas and confidence, they lack the power tool to materialize those ideas, resulting in a significant waste of female labor resources.

Educational Limitations: With an average score of 2.9 (approaching the lower secondary level), the cultural foundation of these women is basic but remains insufficient for accessing business management knowledge or high-tech techniques. When combined with the barrier of low decision-making power, this average educational level makes women more prone to settling for simple, manual labor with little breakthrough potential.

Summary, Table 2 confirms that liberating women from domestic burdens and enhancing their decision-making status within the family are the key factors. If training is only technical without changing gender prejudices, poverty reduction efforts will remain superficial and fail to address the root of the problem.

4.1.3. Local and ethno-linguistic barriers

The double vulnerability of ethnic minority women in the study area, where geographical and linguistic barriers form a wall separating them from the flows of the market economy is quite evident.

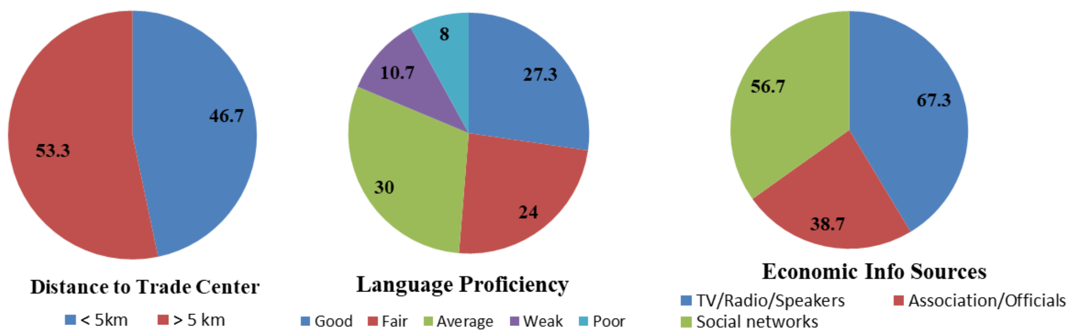

Figure 3. Status of highland-specific and language barriers.

Source: Surveyed and synthesized by the author group

First, regarding geographical barriers and market access: Only 46.7% of households live within a 5 km radius of a trade center. This implies that over 53% face severe topographical isolation. Large physical distances not only increase transport costs for agricultural products but also limit direct contact with purchasing hubs, pushing women into a passive position dependent on local middlemen.

Second, regarding national language barriers: Although improvements have occurred, nearly one-fifth of surveyed women (18.7%) have Weak or Poor national language proficiency. Furthermore, 30.0% at the Average level indicates that over 48% of women encounter difficulties or lack confidence in conducting economic transactions, reading legal documents, or receiving technical transfers. This is a severe bottleneck preventing them from actively negotiating prices or deeply engaging in high-value-added stages of the supply chain.

Third, regarding shifts in information reception channels: The data records an interesting intersection: traditional channels like TV, radio, village speakers remain dominant (67.3%), reflecting long-standing passive information habits. However, the rise of Social-Media (56.7%) is a positive signal of women's efforts to connect technologically. Nevertheless, access via Association, Union officials remain relatively low (38.7%), suggesting that direct support channels from social institutions need strengthening to compensate for knowledge deficits caused by language barriers.

Summary: Combining these indicators, highland women in Son La fall into a state of information and geographical isolation. Language limitations neutralize the advantages of social media information, making potential economic opportunities distant, thereby directly sustaining prolonged multidimensional poverty in highland like Muong La and Bac Yen.

4.2. Impact of barriers on the livelihood transformation

To provide a comprehensive view of the existing challenges, the matrix below will analyze in detail the impact of each group of barriers on career transition. These barriers not only hinder livelihood innovation but also directly affect income sustainability.

Table 3. Impact matrix of barrier groups on livelihood transformation and income.

Barrier Group	Specific Barrier Content	Impact on Livelihood Transformation Process	Impact on Income and Economic Status
Group 1: Structural and	Lack of access to land and credit; especially information poverty and lack of digital skills.	Limits the ability to shift to non-agricultural sectors; difficult to access digital commerce	Low and precarious income due to complete dependence on

Resource Barriers		platforms for product promotion.	intermediaries; low added value of products.
Group 2: Cultural and Gender Institutional Barriers	Ideology of favoring males over females; burden of informal labor (housework); lack of decision-making power within the family.	Causes time poverty, making it difficult for women to participate in vocational training or shift to services/tourism.	Leads to loss of opportunity costs and inability to reinvest in new economic models (green economy, circular economy) due to lack of financial autonomy.
Group 3: Highland-Specific and Language Barriers	National language barrier; fragmented topography; strict community and kinship rules governing economic behavior.	Creates a significant time lag in receiving technology transfer and complex technical processes; maintains subsistence production methods.	Low economic efficiency due to high resource usage but poor productivity; difficulties in connecting and expanding markets outside the community.

Source: Synthesized by the author group

(1) Group 1: Structural and Resource Barriers act as a bottleneck, directly restricting the breakthrough potential of women in Son La during the transition from a subsistence to a commodity-based economy. In the plum-growing regions of Moc Chau and mango-growing areas of Yen Chau, women are the primary labor force, directly handling cultivation and harvesting. However, due to a lack of digital skills (such as using social media or e-commerce platforms for promotion) and market forecasting information, they are nearly disconnected from high-value chains. Instead of proactively connecting with large buyers or selling directly through online channels to optimize profits, they are forced to sell produce via intermediaries at the farm gate at low prices, frequently facing price squeezing during peak seasons. This ensures that their actual income is disproportionate to their labor while stifling their motivation to transition toward high-tech or green agricultural models encouraged by the province.

(2) Group 2: Cultural and Gender Institutional Barriers are considered internal obstacles with the greatest institutional inertia, creating invisible walls that prevent women from stepping out of traditional livelihood forms. In community-based tourism areas such as Ngoc Chien (Muong La) or Ban Ang (Moc Chau), Thai and H'Mong women possess immense indigenous cultural capital, including culinary arts, brocade weaving, and embroidery. However, reality shows that many still struggle to transition from upland farming to professional homestay services. The primary cause is family prejudice, which views welcoming guests or vocational training as inappropriate for a wife or mother. Many women aspire to join tourism management or communication skill workshops but lack support from their husbands or cannot balance domestic duties. Consequently, they remain trapped in arduous, low-income agricultural work, while the opportunity to add economic value from existing cultural assets is lost, keeping their economic status within the family and community dependent.

(3) Group 3: Highland-Specific and Language Barriers create physical and communicative threshold hurdles making it difficult for ethnic minority women in Son La to integrate into the modern market economy. In highland border communes of Sop Cop or remote villages in Bac Yen, many H'Mong women practice diligent upland rice cultivation and livestock farming, yet economic efficiency remains poor. Due to language barriers, they often struggle during training sessions on biosecurity livestock techniques or VietGAP fertilizer standards, which are typically taught in the national language. Failing to master these processes leads to a state of passive production (relying on nature), utilizing high resources for

poor productivity. Furthermore, treacherous terrain makes transporting agricultural products (such as maize or cassava) to commune centers extremely difficult; hesitating to communicate in the national language with strangers, they often choose to sell to retail middlemen at prices significantly lower than market rates. The combination of language and topographical barriers creates a significant time lag in improving living standards and expanding commodity production for women in these especially disadvantaged areas.

4.3. Economic consequences for women in Son La: income disparity and livelihood vulnerability

Under the combined impact of social barriers and delays in livelihood transition, women's incomes in Son La show significant disparities, clearly reflecting multidimensional poverty.

Table 4. Income comparison and analysis of economic status by gender.

Livelihood Group	Status/Typical Occupation Type	Male Income (Million VND/month)	Female Income (Million VND/month)	Gap (%)	Primary Gender Barrier (Section 4.1)
Commodity Agriculture	Male: Driver, transport, price negotiation. Female: Harvesting, weeding, manual packaging.	4.8	4.2	12.50	Groups 1 & 2: Lack of decision-making power and digital skills.
Services / Tourism	Male: General management, tour coordination, service driving. Female: Cooking, cleaning, performing brocade weaving.	8.2	7.0	14.63	Group 2: Housework burden and gender stereotypes.
Hired Labor	Male: Construction worker, technician, machine operator. Female: Construction assistant, weeding for hire, janitor.	6.6	4.9	25.76	Groups 1 & 3: Lack of vocational training and language barrier.
Average		6.53	5.37	17.76	

Source: Synthesized by the author group

While national statistics indicate that the average income of female-headed households tends to be high (with female household heads earning 5.665 million VND/year compared to 5.329 million VND/year for male heads often concentrated in urban areas or small households), the reality in the Son La highlands presents a contrasting picture. The use of male income data independently surveyed by the authors and incorporated into this study for comparison reveals that within the indigenous cultural context where men hold absolute dominance as household heads, women, despite being the primary labor force, suffer from the synergistic impact of social barriers. This leads to their actual income being significantly lower than their potential and compared to men in the same region. The percentage difference (%) is calculated based on the gender income gap formula, using men's income as the base unit of comparison.

Empirical results in Table 4 clearly demonstrate the reality of gender-based income inequality within the research area of Son La province. The average monthly income of men (6.53 million VND) is higher than that of women (5.37 million VND) across all livelihood groups, resulting in an average gender pay gap of 17.76%.

Notably, the deepest disparity was recorded in the Hired Labor group (25.76%). This reflects a fracture in access to vocational training and physical/topographical barriers (Groups 1 & 3), where men often undertake high-paying technical, construction, or machinery operation roles, while women are relegated to auxiliary and service tasks with significantly lower wages. In the Services and Tourism group, despite women possessing the advantage of indigenous cultural capital, the income gap remains at 14.63%. This consequence stems directly from gender-institutional barriers (Group 2), where men hold management, tour coordination, or service driving roles, while women primarily perform domesticated tasks such as cooking or housekeeping.

Overall, these figures indicate that social barriers not only limit opportunities but also directly freeze women at the lowest value-added stages of the livelihood value chain. The persistent double-digit income disparity serves as concrete evidence that unless barriers to decision-making power and digital skills are dismantled, highland women in Son La will continue to face economic disadvantages even amidst local structural shifts in employment.

The clear inverse correlation between the level of social barriers and economic efficiency in women's livelihoods in Son La is vividly illustrated in the data in Table 5 below.

Table 5. Comparison of income efficiency across women's livelihood model groups.

Livelihood Model Group	Average Income (Million VND/month)	Difference Coefficient (Compared to traditional cultivation)	Income Stability Level (Low/Avg/High)	Social Barrier Impact (Level 1-5)
Group A: Traditional Cultivation (Subsistence upland rice, maize, cassava)	2.575	1.0 (Base)	Low	4.8 (RA)
Group B: Circular Economy/New Agriculture (Closed-loop livestock, VietGAP, organic)	4.275	1.66 times	Average	3.2 (RB)
Group C: Non-agriculture & Services (Community tourism, workers, retail)	7.082	2.75 times	High	1.8 (RC)

Source: Synthesized by the author group

The group of women maintaining traditional cultivation methods (Group A) faces extremely high pressure from social barriers (RA = 4.8/5), resulting in the lowest average monthly income of only 2.575 million VND with poor stability. Conversely, when barriers are dismantled (reduced to 1.8/5 in Group C), women's income experiences a powerful breakthrough, reaching 7.082 million VND 2.75 times higher than that of Group A. Additionally, the circular economy and new agricultural models (Group B) also record significant income growth, earning 1.66 times more than traditional cultivation.

This demonstrates that breaking down barriers related to digital skills and technical knowledge (Barrier Group 1) has directly created added value for agricultural products. These comparative results affirm a crucial argument: social barriers encompassing cultural, linguistic, and resource-based factors are not merely psychological hurdles but act as direct agents of economic loss, hindering the sustainable poverty escape of highland women. The nearly threefold income disparity between high-barrier and low-barrier groups serves as compelling evidence for the urgent need for policies that support women's livelihood transitions into the non-agricultural and service sectors.

Furthermore, educational attainment and national language proficiency are key factors determining women's position in the value chain and their actual income levels. Data from Table 6 further confirms this inherent principle in the livelihoods of this highland region.

Table 6. Correlation between educational level, language, and economic efficiency.

Education Level Group	National Language Proficiency	Position in the Agricultural Value Chain	Average Income (Million VND/month)	Gap from Poverty Threshold (2021-2025 Standard)
Group 1: Below primary/ Illiterate	Limited (Poor listening/ speaking)	Simple labor (Weeding, harvesting for hire, subsistence).	1.682	Very close to the poverty threshold
Group 2: Lower - Upper Secondary	Average (Basic communication)	Technical labor/Agricultural retail (Processing, sorting, market sales).	2.854	Above the near-poverty threshold
Group 3: Post-secondary (Vocational/ College/Uni)	Good (Fluent)	Management/Business/Expert (Contract negotiation, model management).	6.085	High/Stable

Source: Synthesized by the author group

The results show an extremely profound income differentiation based on educational background. Women with less than a primary education or who are illiterate (Group 1), facing significant national language barriers, are almost exclusively limited to simple labor and subsistence production, resulting in the lowest average income of 1.682 million VND/month. This figure barely exceeds the new rural poverty threshold of 1.5 million VND, indicating high vulnerability and a very high risk of falling back into poverty.

Conversely, the group of women with post-secondary education (Group 3), thanks to their fluency in the national language and specialized knowledge, have risen to hold management or independent business positions. This group's income reaches 6.085 million VND/month, which is 3.6 times higher than that of Group 1. This proves that education and language are not just communication tools but direct economic resources. The deficit in educational attainment (Barrier Group 3) directly imprisons women in the lowest value-added production stages, making it difficult for them to achieve income breakthroughs regardless of their labor intensity.

Another special thing is the empirical data in Table 7 illustrate a stark contrast in the vulnerability of women to external shocks such as natural disasters, epidemics, or falling agricultural prices.

Table 7. Comparison of income instability and shock resilience.

Target Group (Classified by digital/info skills)	Market Information Access/Alert Capability	Level of Income Reduction During Shocks (Disaster/Price drop)	Number of Backup Livelihood Options	Poverty Re-occurrence Risk (Level 1-5)
Information-poor Group: Do not use smartphones/internet, lack digital skills.	Passive (Hearing via speakers or neighbors).	58.1 %	1.2	4.6
Average Information Access Group: Basic smartphone use (Zalo, Facebook).	Partially active (Following news, village/commune groups).	29.5 %	1.8	3.1
Good Digital Skills Group: Proficient in digital platforms and e-commerce.	Very active (Daily price updates, in-depth weather forecasts).	9.3%	3.1	1.5

Source: Synthesized by the author group

The results indicate that information poverty and the lack of digital skills (Barrier Group 1) are not merely knowledge limitations but direct causes that exacerbate economic losses.

The information-poor group experiences an income drop of up to 58.1% when a shock occurs the most severe damage among the surveyed groups. The primary cause stems from passive information access, leading to a lack of proactivity in risk prevention. Notably, this group averages only 1.2 backup livelihood options, demonstrating that their livelihoods are extremely monotonous and entirely dependent on traditional agriculture. Consequently, the poverty re-occurrence risk index reaches an alarming level (4.6/5). Conversely, the group with good digital skills exhibits flexible and sustainable resilience. By updating daily prices and in-depth weather forecasts through digital platforms, their income reduction is kept at a minimum (9.3%), with the capability for rapid recovery. With an average of 3.1 backup livelihood options (a combination of production, online business, and services), this group is nearly free from the risk of falling back into poverty (1.5/5).

The difference in resilience between these two groups reaffirms that breaking digital skill barriers is the key to diversifying livelihoods and creating a self-sustaining social safety net for highland women. Without solutions to bridge the information technology gap, vulnerable women will remain trapped in a cycle of instability, increasing the burden of multidimensional poverty for the locality amidst increasingly complex climate change and market volatility.

4.4. The "negative synergistic effect" of intersecting barriers on women in Son La

This study introduces the concept of the "negative synergistic effect" to describe a specific impact mechanism that extends beyond the descriptive scope of the traditional intersectionality framework.

Nature and Mechanism: While intersectionality primarily focuses on identifying the static overlap of identity markers (gender, ethnicity, class) that create unique experiences of discrimination, the "negative synergistic effect" emphasizes dynamic amplification. Accordingly, barriers are not merely cumulative; instead, the presence of one barrier exponentially increases the intensity and harm of another, creating a livelihood bottleneck that women cannot break through on their own.

Differences in Consequences: Intersectionality helps us understand *where* ethnic minority women are doubly disadvantaged. However, the "negative synergistic effect" explains why they are freezen in a low-income trap. For example, the intersection of fragmented terrain (>53% residing far from trade centers) and a lack of property ownership (only 25.3% named on land titles) are not just hai parallel difficulties. They resonate to paralyze self-reliance: the lack of a land title prevents them from accessing formal loans to overcome geographical disadvantages (such as purchasing transport), leading to complete isolation and forced acceptance of price suppression by middlemen.

Practical Value: The most significant difference lies in the direction of the solution. While intersectionality suggests specific policies for each target group, synergistic theory requires integrated and synchronous solutions. Addressing a single barrier in isolation (e.g., providing vocational training without supporting property rights) will be neutralized by the synergistic of the remaining barriers. Only by simultaneously dismantling these intersecting bottlenecks can the negative effect be neutralized, fostering an upward developmental spiral.

4.4.1. The synergy of intersecting barriers

(1) The Isolation Trap of Topography and Property (Intersection of Figure 2 & 3): The synergy between steep, fragmented terrain (with over 53% of households far from trade centers) and the lack of property ownership (only 25.3% named on land titles) creates a dual isolation. Without collateral, women cannot access formal credit (18%) to invest in transportation or on-site primary processing equipment to overcome geographical disadvantages. Consequently, they are forced to sell agricultural products at the garden gate to middlemen at low prices, entirely losing the advantage of added value.

(2) The Paradox of Aspiration and Power (Intersection of Tables 2 & Figure 3): This is a critical contact point: women exhibit high confidence (3.8/5) but possess very little decision-making power (1.8/5). This confidence is neutralized by language barriers (with nearly 49% having only average to poor national language proficiency). When a woman wishes to transition her livelihood model but lacks the language skills to communicate with technical officials and lacks a voice within her family, her aspirations are quickly stifled, leading to a sense of resignation and the persistence of outdated farming practices.

(3) Time Poverty and Information Deprivation (Intersection of Tables 2 & Figure 3): Spending 5.2 hours per day on housework, combined with living in remote areas, plunges women into severe time poverty. They lack the time to travel to commune centers for training workshops or to meet with Union officials (only 38.7% access information through this channel). This explains why they remain dependent on passive information channels like village speakers or television rather than proactively seeking opportunities via social media.

4.4.2. Inevitable consequences for livelihoods and income

(1) Persistence of Multidimensional Poverty: These barriers form a closed loop. A lack of voice leads to a lack of property; a lack of property leads to a lack of capital; a lack of capital leads to precarious livelihoods; and precarious livelihoods prevent them from accessing further education and skill upgrades.

(2) Dependence on Low-Value Labor: Highland women in Son La are freezen in manual, arduous tasks such as harvesting and weeding for hire the stages with the lowest income in the value chain. This creates the profound gender income gap analyzed in Table 6.

(3) Risk of Being Left Behind in the Digital Age: Despite owning smartphones (56.6%), linguistic barriers and a lack of financial autonomy mean women primarily use technology for entertainment rather than transforming it into a genuine business tool.

The most significant difference of this study is the establishment of a real gender income gap of 17.76%, demonstrating that women are stuck in the lowest value-added stages of the value chain. This is crucial data that previous studies in Son La province have not been able to detail.

4.5. Solutions to dismantle barriers and promote sustainable livelihoods

The system of solutions must focus on enhancing self-reliance capacity and releasing the freezen resources of women in Son La.

(1) First: A breakthrough through the "Digitalization integrated with Language" solution. The "Digitalization integrated with Language" solution is identified as the key to mitigating negative resonance effects and removing geographical barriers and information isolation for ethnic minority women. The concept of "language integration" in this solution means incorporating economic, technical, and commercial terminology into intuitive digital interfaces, rather than simply providing separate training in the common language. The focus is on building bilingual digital applications or materials (common language and indigenous language), incorporating audio conversion tools to help women easily access practical economic information from in-depth weather forecasts and daily agricultural price updates to basic e-commerce skills. Enhancing digital literacy, coupled with the use of relevant languages, helps women shift from a passive to an active risk management approach, minimizing income decline from 58.1% to a safe level when facing unforeseen events. This is a prerequisite for women to effectively access certified brands such as "Son La River Fish" or "Son La Sturgeon" through the application of technology to attach brand logos to packaging. When language barriers are removed on a technological platform, women can confidently overcome "information poverty" to participate in intercropping and product distribution chains and bring Son La agricultural products to major economic forums.

(2) Second: Unleashing economic leverage through Ownership and Credit. To unleash economic leverage and dismantle structural barriers (Group 1), the core solution involves supporting women in establishing property ownership specifically by being named on Land Use Right Certificates to create a legal foundation for effective access to formal credit sources. When the bottlenecks of capital and collateral are removed, women will possess the financial capacity to realize livelihood models specifically designed for the unique topography and resource strengths of each sub-region. These models range from: Highland border areas (H'Mong, Dao, Xinh Mun, Lao...): Developing agro-forestry, cold-water fish farming, and traditional handicrafts such as blacksmithing and rattan weaving; Da River basin (Thai, Muong...): Supporting VietGAP cage fishing and reservoir-based tourism; National Highway 6 corridor: Concentrating on retreat tourism, clean agricultural processing, and high-quality floriculture [11]. Promoting non-agricultural and service models (Group C), alongside technical support for organic agriculture in communes like Bac Yen, Mai Son and Song Ma, is a key factor in narrowing the 17.76% gender pay gap. This strategic path aims for sustainable economic development and substantive gender equality for ethnic minority women in the Son La highlands.

(3) Third: Releasing productivity through gender institutional change and human resource training. To thoroughly address cultural barriers (Group 2), it is necessary to implement synchronized infrastructure policies and the "Partnering Husband" communication campaign to share the burden of unnamed domestic chores. This will help women escape the time poverty trap, which currently consumes 5.2 hours per day. Alongside reducing informal burdens, the province should emphasize vocational training in community tourism for key communes to preserve traditional culture while creating stable rural employment. Specifically, in remote areas like Sop Cop, the development of "Nutrition Agriculture" is extremely urgent to improve access to clean food for pregnant women and children amidst declining natural resources. When social burdens are alleviated, the synergy of digital capacity (knowledge), property rights (resources), and self-determination (status) will create an upward

developmental spiral. This enables women in Son La to build the internal strength necessary to break outdated gender institutions, aiming for sustainable multidimensional poverty reduction and substantive gender equality.

To ensure the above solutions achieve tangible results, the study proposes specific implementation roadmaps linked to local realities:

Firstly, the "Digitalization in parallel with indigenous languages" roadmap: Building a network of "Digital Volunteers" in villages, prioritizing young women fluent in the common language to directly support vulnerable women groups in installing and using applications such as Zalo and Facebook for economic purposes. Next, integrating multilingual (Thai, H'Mong, etc.) audio agricultural product market news on village loudspeaker systems and mobile applications. Specifically: In plum-growing areas in Moc Chau or mango-growing areas in Yen Chau, women's associations can cooperate with telecommunications companies to establish "Digital Agricultural Market" groups on Zalo. Through this, women can receive daily price updates and VietGAP procedures in their native languages, enabling them to proactively negotiate directly with large purchasing units, instead of relying on intermediary traders.

Secondly, the "Establishing Property Rights and Leveraging Credit Capital" roadmap: Implement the "Double-Name Land Title" campaign (both husband and wife listed on the title), in collaboration with commune land registration offices to simplify procedures for correcting land certificates. Simultaneously, policy banks need to design a "Green Startup for Women" loan package with flexible collateral requirements based on commitments to circular economy models. Specifically: In mountainous border communes like Sop Cop or Bac Yen, supporting women in owning property will allow them access to preferential loans to invest in closed-loop livestock farming systems or household-scale brocade weaving workshops. Income from these new agricultural models (Group B) could increase 1.66 times compared to traditional farming.

Thirdly, *the "Freeing Time and Changing Gender Institutions" roadmap:* Piloting the "Community Childcare Group" or "Village Childcare Center" model to reduce the burden of childcare on women (currently occupying 5.2 hours/day). Simultaneously, organizing "Husband-Partner" training courses specifically for men to raise awareness of the economic value of sharing household chores. Specifically: In community tourism destinations such as Ngoc Chien commune (Muong La) or Ang village (Moc Chau), when men participate in management and service functions, women can dedicate time to professional homestay training or participate in digital economy forums. This helps narrow the gender income gap (currently at 14.63% in the service sector) and maximize the advantages of local cultural capital.

Especially these solutions cannot be implemented in isolation. Therefore, a synchronized solution system is the only way to neutralize the "negative synergistic effect" and create a sustainable upward developmental spiral for highland women in Son La.

5. CONCLUSION

The study confirms that the system of multidimensional social barriers is creating a constricting net that hinders the development of women in Son La. The central finding is the "negative synergistic effect", where linguistic limitations, geographical barriers, and gender prejudices are exacerbated by the lack of digital capacity and property ownership rights. Empirical results reveal a significant gender pay gap (17.76%) and the extreme vulnerability of the information-poor group to external fluctuations. Therefore, the roadmap for dismantling these barriers must be based on synchronized integration: enhancing technological capacity, establishing economic autonomy, and liberating women from outdated gender institutions. This provides a pivotal scientific basis for Son La province to develop substantive gender equality policies, aiming for sustainable multidimensional poverty reduction for ethnic minority women during the current transitional period.

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