

SOLUTIONS TO ENHANCE HUMAN CAPITAL TO SUPPORT HMONG HOUSEHOLDS IN ACHIEVING SUSTAINABLE POVERTY ALLEVIATION: THE CASE OF THANH HOA PROVINCE, VIETNAM

DOI: <https://doi.org/10.26758/16.1.27>

Duyen Thi NGUYEN (1), Quynh Nhu Thi DOAN (2), Phuong Thi HOANG (3), Ton Van LE (4), Tung Van MAI (5)

(1) (2) (3) (4) (5) Faculty of Social Sciences, Hong Duc University, Thanh Hoa Province, Vietnam.

Emails and ORCID iDs:

- (1) nguyenthiduyen@hdu.edu.vn, <https://orcid.org/0009-0002-4936-8968>
- (2) doanthinhuquynh@hdu.edu.vn, <https://orcid.org/0009-0000-5109-5028>
- (3) hoangthiphuong@hdu.edu.vn, <https://orcid.org/0009-0003-2597-0089>
- (4) levanton@hdu.edu.vn, <https://orcid.org/0009-0001-6884-407X>
- (5) maivantung@hdu.edu.vn, <https://orcid.org/0009-0006-1965-2123>

Address correspondence to: Duyen Thi NGUYEN, PhD. Faculty of Social Sciences, Hong Duc University, 565 Quang Trung Street, Dong Ve Ward, Thanh Hoa City, Thanh Hoa Province, Vietnam; Phone: 0933732788; Email: nguyenthiduyen@hdu.edu.vn

Abstract

Objective: To study and analyze the current state of human capital and its impact on sustainable poverty alleviation capacity, and to propose solutions to enhance human capital to support Hmong households in Thanh Hoa province in achieving sustainable poverty alleviation.

Methods: This study employs a mixed-methods design. Quantitative data from 400 households (defined according to the multidimensional poverty standard for the period 2016-2020) were systematically sampled. Qualitative data, including 10 in-depth interviews and 2 focus group discussions, were purposefully selected and coded for analysis to ensure representativeness and ethical research. Logistic regression was used as the primary analytical tool, combined with linear regression for sensitivity testing.

Results: The results show that the human capital of Hmong households is limited, especially in terms of education level, skills and experience, and access to markets and information. Regression analysis confirms the statistically significant positive impact of education ($B = 0.023$, $\text{Sig.} = 0.000$, multivariate regression), skills, experience (logistic regression), and access to capital on poverty reduction. Poor households face many difficulties in mobilizing and utilizing capital; qualitative data indicate challenges such as precarious employment, limited access to inputs, and limited non-agricultural employment.

Conclusion: There is a need to shift from material support to capacity building (empowerment), with a focus on bilingual education and market-oriented vocational training.

Keywords: Hmong ethnic group; Thanh Hoa; sustainable development; household; human capital; poverty reduction

Suggested citation (APA):

Nguyen, D. T., Doan, Q. N. T., Hoang, P. T., Le, T. V., & Mai, T. V. (2026). Solutions to enhance human capital to support Hmong households in achieving sustainable poverty alleviation: The case of Thanh Hoa Province, Vietnam. *Anthropological Researches and Studies*, 16. 412-432. <https://doi.org/10.26758/16.1.27>

Introduction

In the context of Vietnam's international integration and development, human capital is considered a key factor in determining production capacity, access to opportunities, and households' ability to escape poverty. Human capital is the foundation for sustainable development: economically, it helps increase labor productivity and improve income; socially, it contributes to raising intellectual levels, improving health, and promoting gender equality. Classic studies by Schultz (1961) and Becker (1964) have shown that investment in education and training is the most effective way to improve the quality of life.

In Vietnam, poverty reduction for ethnic minorities has always been a top priority. However, mountainous areas, where ethnic minority communities live, inhabited by ethnic minority communities, continue to experience the most concentrated and persistent levels of poverty nationwide. Research by Tran Thi Hanh et al. (2010) shows that human resources in ethnic minority areas remain weak in terms of physical health, intellectual capacity (education and skills), and mental fortitude (willpower and adaptability). Similarly, the World Bank report (2012) also points out the causes of persistent poverty among ethnic minority households, including limited access to education, financial services, markets, and cultural barriers. This context is particularly evident in Thanh Hoa province, where the Hmong people (with 2,361 households and 14,917 people) mainly live in the three mountainous districts of Muong Lat, Quan Hoa, and Quan Son. Despite numerous support policies, this region still has an exceptionally high poverty rate, reaching 73.47%. This situation demonstrates that current solutions are not truly sustainable and require a more in-depth approach that focuses on enhancing people's inherent capacity.

Globally, research on poverty has evolved from measuring it solely by income (Copenhagen Summit, 1995) to a multidimensional approach, in which human capital is a central factor. Numerous studies have demonstrated a strong correlation between poverty and aspects of human capital such as health (OECD & WHO, 2003) and education (Coley & Baker, 2013). Studies on sustainable livelihoods (DFID, 1999) also emphasise the role of empowering communities and leveraging indigenous knowledge, rather than imposing external models (Jamieson et al., 1998).

Through the analysis of domestic and international studies, the authors identified the following gaps: Current studies mainly focus on assessing *the reality of poverty* (what households

lack) without delving into the analysis of *poverty alleviation capacity* (what they can do) and the potential internal strengths of the community; Analyses of the causes of poverty in Vietnam often apply a general model, failing to highlight the specific cultural, social, and environmental factors of each ethnic minority group, especially the Hmong in Thanh Hoa; Poverty reduction solutions are often designed using a “top-down” approach, which risks creating a passive and dependent mindset. Further research is needed to assess the factors influencing the capacity for sustainable poverty alleviation in order to propose solutions that harness internal strengths.

To address the gaps identified, this study focuses on answering the following questions:

(1) What is the current state of human capital of Hmong households in mountainous districts of Thanh Hoa province, considering aspects of education, health, labour skills, and aspiration for advancement?

(2) What human capital (subjective) and contextual (objective) factors influence the sustainable poverty alleviation capacity of Hmong ethnic households?

(3) Based on the current situation and influencing factors of human capital, what are the most appropriate and practical solutions to improve human capital and support Hmong households in Thanh Hoa to escape poverty sustainably?

This study focuses in depth on Human Capital; however, control variables such as arable land area, household assets, and distance to markets were also considered in preliminary analyses. The results show that while these physical factors are important, educational attainment and skills still play the most statistically significant role in the logistic regression model when predicting poverty escape potential.

Theory and analytical framework

Human capital theory and sustainable development

Human capital is the total of knowledge, skills, experience, health, labor capacity, and spiritual values that people accumulate, enabling them to participate in the production process, generate income, and improve their well-being (Schultz, 1961; Becker, 1964). Therefore, human capital is not limited to educational level or professional skills, but also encompasses physical and mental health, adaptability, learning and creativity, as well as moral values, willpower, and the drive to succeed in life.

The role of human capital in sustainable development manifests in many ways. First, economically, human capital is an essential input factor that determines labor productivity, product quality, and the economy's competitiveness, as emphasized by Romer (1990) in endogenous growth theory. When people are equipped with knowledge, skills, and good health, they can work more efficiently and create greater value. At the household level, human capital helps improve production capacity, diversify livelihoods, and expand access to employment opportunities, thereby increasing income and improving living standards (DFID, 1999).

Furthermore, human capital is a resource for innovation and creativity, promoting scientific and technological progress, and providing impetus for socio-economic development (Lucas, 1988). Socially, investing in human capital contributes to raising the intellectual level of the population, improving public health, promoting gender equality, and protecting the environment,

all of which support the Sustainable Development Goals set by the United Nations Development Programme (UNDP, 1990).

In the specific context of the Hmong people in Thanh Hoa, human capital plays a vital role. Low educational levels and a lack of vocational skills can limit people's access to employment and income. Poor health can affect labor productivity and the ability to participate in economic activities. A strong will to succeed and a spirit of self-reliance can help the Hmong overcome difficulties, adapt to market changes, and achieve development goals.

Specifically, for Hmong households, education helps them access information and new production techniques, thereby increasing crop and livestock productivity. Vocational skills enable them to take on non-agricultural jobs, generating additional income. Good health allows them to work long hours. Moreover, their determination to improve their lives helps them persevere in the face of difficulties, persistently seeking solutions to escape poverty.

Sustainable Livelihoods (SLF) and Human Capital Analysis Framework

For a more in-depth analysis, the study applies the Sustainable Livelihood Analysis Framework (SLF) (DFID, 1999). According to the SLF, livelihoods comprise five resources: human, social, natural, financial, and physical. These resources are interdependent and influence each other. Human capital is fundamental to the effective exploitation and utilization of other resources.

Households with good human capital (education, skills, health, willpower) will better utilize other resources, achieve desired livelihood outcomes, enhance resilience, and move towards sustainable development. A lack of human capital will limit access to and effective use of resources, leading to the risk of poverty and underdevelopment.

The concept of poverty and poverty alleviation.

According to the United Nations (UN, 2012), “Poverty is the lack of the minimum capacity to participate effectively in social activities. Poverty means not having enough food and clothing, not having access to education or healthcare, not having land to cultivate or a job to support oneself, and not having access to credit. Poverty also means not being safe, not having rights, being excluded, being vulnerable to violence, living in risky conditions, and not having access to clean water and sanitation.”

In Vietnam, poverty is divided into absolute and relative poverty: Absolute poverty is the situation where a segment of the population does not enjoy and satisfy the basic, minimum needs to sustain life (food, clothing, housing, healthcare, education, clean water, etc.); Relative poverty is the situation where a segment of the population has a living standard below the average level of the community in the locality at a specific period (Ministry of Labor, Invalids and Social Affairs, 2015).

Households that have escaped poverty are defined by the Sustainable Poverty Reduction Policy, which is based on poverty reduction and ensures the following criteria: The actual income of poor individuals and households is improved, exceeding the poverty line, minimizing the risk of income-related relapse into poverty if risks or changes in the poverty line occur; They are provided with opportunities and full access to socially generated production resources, support services for the poor, and the right to participate in and have a voice in economic development and poverty reduction planning activities for themselves and their localities; They are equipped with

certain “minimum” conditions to avoid relapse into poverty when faced with objective risks such as natural disasters, floods, epidemics, or changes in the poverty line; They are guaranteed equal access to vocational education and healthcare so that, in the long term, the poor, those who have recently escaped poverty, and their children can acquire the necessary knowledge and business skills to generate a stable income, thereby enhancing their resilience against external shocks such as natural disasters, floods, and epidemics (Prime Minister, Decision No. 1614/QD-TTg dated September 15, 2015)

Research methods

This study employs a mixed-methods approach, combining quantitative and qualitative methods to comprehensively analyze the current situation and factors influencing human capital among Hmong households in Thanh Hoa province.

Quantitative data:

Research sample: The survey was conducted on 400 Hmong households in 3 districts: Muong Lat, Quan Hoa, and Quan Son. The sampling process used systematic random sampling based on the household registration list provided by the local authorities in 2018, ensuring the representativeness of the population. The sample included 234 poor households (58.5%) and 166 households that had escaped poverty (41.5%).

Variables: The independent variable (human capital) and the dependent variable (poverty status) are specifically measured. *Note: Control variables such as arable land area, assets, and distance to the market are also included in the preliminary analysis to control for confounding factors.*

Classification criteria: The status of “poor household” and “household escaped poverty” is determined according to the official local government list from 2018. This list is based on Decision No. 59/2015/QD-TTg of the Prime Minister on the multidimensional poverty standard applicable for the period 2016-2020. This classification has been independently verified by comparing it with the village head's records in the surveyed area.

Qualitative data:

Qualitative sampling: Purposive sampling was used to ensure information saturation. A total of 10 in-depth interviews (IDIs) were conducted with the following structure: 3 commune officials, 2 village elders/heads, 3 heads of poor households, and 2 heads of households that have escaped poverty (including 6 men and 4 women; aged 35-60). In addition, 2 focus group discussions (FGDs) were organized, with 6-8 participants per group.

Analysis: Data were recorded, transcribed, and encoded in NVivo using a three-step process (open encoding, axis encoding, and selective encoding). Triangulation was applied to compare information between interviews, observations, and quantitative data to ensure objectivity.

Data analysis methods:

Quantitative data were analyzed using SPSS 22.0. To analyze the factors influencing poverty status (binary variables: 0=poverty, 1=escaping poverty), the study used Logistic Regression as the main model. In addition, a multivariate regression model was run in parallel to analyze sensitivity and test the consistency of the impact coefficients.

Research results

To gain a comprehensive understanding and propose appropriate solutions to improve the quality of life for the Hmong ethnic minority, the following section will analyze the current situation and the factors affecting human capital.

The current state of human capital among Hmong households in Thanh Hoa, Vietnam.

The human capital of a Hmong household is assessed based on the following factors: number of laborers, educational level, professional qualifications, access to new technologies, household economic management capacity, indigenous knowledge, occupation, health, learning capacity, and will to escape poverty.

Characteristics of labor

Table 1

Number of workers healthy enough to work and earn income (%)

Number of workers	Poor households (%)	Households lifted out of poverty (%)
No workers	0	0
One worker	6.5	0
Two workers	67.7	65.0
Three workers	3.2	20.0
Four workers	16.1	10.0
Five workers	3.2	3.0
Six workers	3.2	2.0

Note. Data presented in this table are based on the author's own analysis.

The survey results show a clear difference between the two groups, indicating that the number of laborers in the family is an extremely important factor affecting the ability to escape poverty. Almost no households escaped poverty with only one laborer; Hmong households have a relatively abundant labor force, with 67.7% of households having two laborers, including 65% of the poor households and 65% of the households that escaped poverty. However, the proportion of households with many children remains high, affecting per capita income and the ability to invest in human capital development. Unlike some other ethnic minorities in the mountainous areas of Thanh Hoa, labor shortages or unfit labor are not the main difficulties for Hmong households. Thanks to their high birth rate, Hmong households generally have an abundant and healthy labor force, which is an advantage compared to other ethnic groups. A common drawback is that most workers drop out of school early and do not receive vocational training, leading to a lack of professional skills and an inability to operate modern machinery and equipment. This also limits their ability to update their knowledge and apply advanced farming techniques, affecting productivity and economic efficiency.

Educational level

There is a significant difference in educational attainment between poor households and households that have escaped poverty (Table 2).

Specifically, the group of poor households had the highest proportion of household heads who were not educated (45.5%), higher than the proportion in households that escaped poverty (35.2%). This shows that literacy is one of the main reasons hindering the economic development of poor households. Conversely, among households that escaped poverty, the majority of household heads had completed primary school (45.0%), nearly 1.6 times the rate in the poor household group (28.7%). This indicates that having a basic education (being able to read and write) plays a crucial role in helping households access information and escape poverty.

For higher education levels, the data reveal a noteworthy fact: the graduation rate for lower secondary and upper secondary education among poor households is approximately equal to or higher than that of households that have escaped poverty (lower secondary: 12.2% compared to 6.8%; upper secondary: 13.6% compared to 12.8%). However, at higher professional levels (vocational schools, colleges, universities), the graduation rate from households that have escaped poverty is low (0.2%), while the rate from poor households is absent (0%).

Table 2

Educational attainment of the head of the Hmong household (%)

Household classification	Not going to school	Elementary school graduate	Graduated from junior high school	High school graduate	Graduates of vocational schools, colleges, and universities.	Total
Poor households	45.5	28.7	12.2	13.6	0	100
Households escaping poverty	35.2	45.0	6.8	12.8	0.2	100

Note. Data presented in this table are based on the author’s own analysis.

The Chi-square test results, with a Sig value of 0.003 (99% confidence level), confirm that the difference in educational attainment between the two household groups is statistically significant and correlated with the poverty status of Hmong households.

This situation poses a challenge for local authorities. Although the percentage of poor households with secondary education is not low, they remain poor, suggesting that general knowledge has not been translated into livelihood skills. Therefore, the central solution should not only focus on eradicating illiteracy but also on strengthening short-term vocational training and hands-on instruction. The role of associations and organizations should be promoted in organizing visits to successful economic models, helping people (especially those with basic education) learn how to apply their knowledge to production to achieve sustainable poverty alleviation.

The Chi-square test yielded a Sig value of 0.012 at the 95% significance level, indicating a correlation between educational attainment and the ability to gain business experience. Table 3 clearly shows that the “Good” and “Very Good” levels of business experience learning ability are mainly concentrated among groups with high school education or higher, and among those with vocational, college, and university degrees. Conversely, the “Poor” and “Partially Poor” groups account for a high proportion of those who did not attend school and graduated only from primary school.

Table 3*Household's capacity to learn from business experience. Hmong family (%)*

	Your family has the capacity to learn from business experience.					Total
	Not good	Moderately bad	Moderately good	Good	Very good	
Not going to school	65.8	30.9	3.3	0	0	100.0
Elementary school graduate	50.1	30.0	20.0	0	0	100.0
Graduated from junior high school	45.0	50.0	3.9	6.3	0	100.0
High school graduate	15.0	35.0	20.9	29.9	0	100.0
Graduated from vocational school, college, university, or higher.	0.0	0.0	59.3	30.3	9.4	100.0

Note. Data presented in this table are based on the author's own analysis.

Specifically, among the non-school group, 65.8% rated their ability to learn business experience as “Poor” and 30.9% as “Partially Poor”. In the primary school graduate group, these figures were 50.1% and 30% respectively. Meanwhile, among those with vocational school, college, or university degrees or higher, none rated their ability as “Poor” or “Moderately Poor”. Instead, 59.3% rated it “Moderately Good”, 30.3% “Good”, and 9.4% “Very Good”.

This correlation confirms that investing in education and improving educational attainment is the most necessary and sustainable solution to enhance the poverty alleviation capacity of ethnic minority households. Higher levels of education will help them access, learn, and apply new knowledge and skills to produce more effectively.

Currently, my wife's job is unstable; farming and livestock raising are precarious, heavily dependent on the weather, and require significant investment. The risks in agriculture are also high, and her low level of education makes it difficult for her to switch to a profession outside farming. Furthermore, household production faces difficulties in accessing high-yielding, economically valuable, and disease-resistant plant and animal varieties, as well as irrigation and drinking water sources. (PVS, 35-year-old male, Mong ethnic minority, Nhi Son commune)

The difficulties faced by Hmong households, particularly the uncertainty in agricultural production, limited access to new plant and animal breeds, and difficulties accessing water resources, stem partly from low educational levels, which limit their ability to access information and apply science and technology to production.

Professional skills and production experience

Table 4 presents differences in the occupational structure between poor and newly emerged households in the Hmong ethnic community. While 88.6% of poor households are engaged in farming, this rate is 78.0% among newly emerged households. Differences also appear in the groups of slash-and-burn agriculture and hired labor, although not significantly. Notably, no poor households are engaged in trade or services, while 6.5% of newly emerged households are engaged in trade and 3.2% in services. The proportion of those engaged in other occupations is similar in both groups.

Table 4*Current employment status of Hmong households (%)*

Primary source of income / Occupation	Poor households (%)	Households lifted out of poverty (%)
Farming	88.6	78.0
Reforestation	59.1	67.7
Handicrafts/Animal husbandry	25.0	38.7
Trade	0	6.5
Service	2.3	3.2
Employees	0	29.0
hired workers	9.1	6.5
Combined multiple revenue sources.	0	12.0
Other professions	0	14.3

Note. Data presented in this table are based on the author’s own analysis.

These figures indicate that diversifying occupations, especially developing trade and services, is a crucial factor in helping Hmong households escape poverty. Sole reliance on agriculture, particularly farming, carries many risks and is unlikely to yield significant income gains. Therefore, to achieve sustainable poverty alleviation, households need to be encouraged and supported to participate in various economic activities and diversify their income sources, especially in trade and services.

Table 5*Correlation between the Hmong group and the number of households that have proactively learned to improve their living standards and escape poverty (%)*

Household group	I completely disagree.	Somewhat disagree	Somewhat agree	Agree	I completely agree.
poor households	2.4	2.4	16.7	31.8	47.5
Households escaping poverty	0	0	2.0	31.0	67.0

Note. Data presented in this table are based on the author’s own analysis.

The Chi-Square test results showed a Sig value of $0.018 < 0.05$ with a 95% significance level, indicating a correlation between being a Hmong household head and proactively learning to overcome poverty. The majority of Hmong household heads showed a high level of awareness, rating “Agree” and “Strongly agree” with proactively learning to improve their family's capacity to escape poverty.

However, the employment structure of ethnic minorities in general, and the Hmong in particular, remains backwards, primarily based on agriculture and forestry, with arduous work and low income. The low unemployment rate does not accurately reflect the reality, as they accept low-paying jobs. Ethnic groups with a higher proportion of agricultural work tend to have lower unemployment rates.

Among Mong households, especially those with low incomes, a lack of vocational skills and advanced production experience is typical. This is evident in several aspects: Firstly, farming is the primary occupation (87%), lacking diversification. While the percentages of households escaping poverty through trade and services are higher (3.2% and 6.5%), they remain low. Secondly, limited skills in applying science and technology, with farming relying on traditional experience, lead to low productivity. Thirdly, the average production experience is 16.2 years, but this is mainly traditional experience, with little updating of new knowledge and techniques.

Capacity to raise capital, utilize capital, and find jobs and markets.

Table 6

Capital mobilization capacity of Hmong households (%)

Household group	Not good	Moderately bad	Moderately good	Good	Very good
Poor households	36.4	37.3	20.5	5.9	0
Households escaping poverty	6.5	0	41.9	32.3	19.4

Note. Data presented in this table are based on the author's own analysis.

Table 6 shows that the Hmong people's capacity to mobilize capital remains limited, especially among poor households. 36.4% of respondents believe their capacity to mobilize capital is poor, compared with 6.5% of those who have escaped poverty. Conversely, among households that self-assess their capital mobilization capacity as good or very good, only 5.9% of those in the poor household group rate their capacity as good, compared to 32.3% among those who have escaped poverty. 19.4% of representatives from households that have escaped poverty believe their capacity is excellent, while none of the poor household representatives have such a high capacity.

This is a relatively straightforward difference between the poor and those who have escaped poverty. This fact shows that the poor need to access capital sources boldly, a crucial factor in helping households escape poverty. Investigating the causes of this difference reveals that the socio-demographic characteristics of the household head and members (education, age, skills and work experience, household social capital, etc.) directly influence the ability of Mong ethnic households in Nhi Son to mobilize capital.

Poor households have minimal access to loans due to a lack of knowledge and skills. They are hesitant to borrow because they do not know how to use the borrowed money profitably, and some who borrow do not know how to use the capital effectively, leading to debt. Local authorities always create conditions and connect people who need loans to develop their household economy. However, people are hesitant to borrow because they do not know how to do business, or because the borrowed capital fails or is used for the wrong purposes. (PVS, Chairman of Nhi Son Commune)

According to the commune chairman, although the locality has facilitated people's access to loan sources, many poor households still face difficulties in borrowing and using capital due to

a lack of knowledge, skills, and experience. This shows the importance of improving people's financial management capacity, especially for poor households.

The biggest obstacle to the development of the people here is the lack of motivation to escape poverty and production skills, leading to passive reliance on external support. In Nhi Son, the problem is further exacerbated by the impact of drug abuse. A lack of knowledge and life skills has made many people, including women, vulnerable to being drawn into drug addiction. There are tragic cases where a husband's addiction has dragged his wife down with him, plunging the entire family into a cycle of addiction instead of focusing on economic development. (PVS, Male household lifted out of poverty by the Mong ethnic group, Nhi Son commune)

However, by applying a reflective approach to avoid reproducing prejudiced stereotypes, the study found that this “passivity” or social problem should not be viewed as an inherent cultural characteristic of the Hmong people. Further analysis reveals that this is a consequence of structural barriers: a severe lack of market information, language barriers, and the absence of effective non-agricultural livelihood models in the locality. When people constantly face risks and failures in production, the “wait-and-see” mentality becomes a safer defense mechanism than taking risks by borrowing without management knowledge.

Table 7

Capital utilization capacity of Hmong households (%)

Household group	Not good	Moderately bad	Moderately good	Good	Very good
Poor households	70.0	23.0	7.0	0	0
Households escaping poverty	10.0	25.0	20.0	40.0	5.0

Note. Data presented in this table are based on the author’s own analysis.

Table 7 shows a significant difference in capital utilization capacity between poor households and households that have escaped poverty. Poor households rated their capital utilization capacity as “Good,” while 40% of households that have escaped poverty did so as well. Similarly, 5% of households that have escaped poverty rated their capital utilization capacity as “Very Good,” while none of them achieved this level. The proportion of poor households who self-assess their capital utilization capacity as “Poor” or “moderatelyGood” is significantly higher than that of households that have escaped poverty. This situation arises because poor households often lack education, skills, and experience, and do not know how to do business, leading to the misuse and inefficiency of capital, even using borrowed funds to purchase household items rather than investing in production.

In a market economy characterized by the intense intermingling of people, goods, services, capital, and information, many traditional cultural values, indigenous knowledge, and livelihood models are no longer relevant. Instead, new knowledge, new relationships, new consumer cultures, and new livelihood opportunities are emerging. Overcoming challenges and seizing opportunities

is a continuous process that requires households to experiment, develop, disseminate, and sustain effective practices.

The current capabilities of Hmong ethnic households, impoverished households, remain limited: capital mobilization capacity Is Limited, with 36.4% of poor households rating it “Poor”. Capital utilization capacity: There is a disparity between poor households and those who have escaped poverty, with 40% of the latter rating it “Good,” but no poor households achieved this level. Many poor households use capital improperly and inefficiently. Employment capacity: Limited, with employment mainly in agriculture, lacking stability, and providing low income. Market access capacity: Weak, with products mainly for self-consumption, complex to sell, and frequently subject to price manipulation.

Factors affecting the development of human capital

Sociodemographic characteristics of Hmong households

Sociodemographic characteristics are internal factors that reflect a household's strengths and directly impact its ability to escape poverty. Within the scope of this study, we focus on several sociodemographic characteristics, including the household head's education level, occupation, and the number of household laborers.

Table 8

Some socio-demographic characteristics of Hmong households

Target	Unit	Lowest	Highest	Medium	Standard deviation
Age	Year	13	85	48.12	14.36
Educational level	Year	0	12	3.42	5,023
Skills and experience	Year	0	24	16.12	7.43
Number of workers	People	2	7	4.28	1.21

Note. Data presented in this table are based on the author’s own analysis.

Table 8 shows some socio-demographic characteristics of Hmong households: the average working age is 48.12 years, ranging from 13 to 85 years. The majority of the workforce is middle-aged (30-50 years old); the average educational level is low, equivalent to grade 3 (3.42 years of schooling). There is a significant disparity between households, ranging from illiterate to high school graduates (grade 12); however, the proportion with a high school education or higher is very modest. There is a difference in educational level between poor households and those that have escaped poverty; the average number of years of production experience is 16.12 years, ranging from 0 to 24 years; on average, each household has 4.28 workers, ranging from 2 to 7 people.

Human capital is a crucial factor for socio-economic development, especially in household economies. In Thanh Hoa, to achieve sustainable poverty reduction, all levels of government have consistently prioritized human resource development. Research on human capital among the Hmong people in particular, and ethnic minorities in general, focuses on aspects such as health

and work capacity, skills and experience, educational level, perceptions of poverty, household size (number of children, elderly, and sick people), and solutions for poverty alleviation. Generally, although the Hmong workforce in Thanh Hoa is large, the quality of human resources is limited, evidenced by low educational levels and a lack of advanced production skills and experience.

Regression analysis of factors influencing poverty alleviation capacity.

To analyze the factors influencing the capacity to escape poverty, the study uses logistic regression and multivariate regression models. The dependent variable is the capacity to escape poverty, measured on a binary scale (1 = escaped poverty, 0 = did not escape poverty).

The independent variables include:

Age: The age of the head of the household.

Educational level: Number of years of schooling of the household head.

Skills and experience: Number of years of work experience in the household owner's main production field.

Number of healthy workers: The number of workers of working age who are in good health.

The notion that poverty is normal: A 5-point Likert scale, from “Strongly disagree” to “Strongly agree”.

Many children: Dummy variable, 1 = household has 3 or more children, 0 = the opposite.

There are elderly or sick people: Dummy variable, 1 = household has older adults over 60 years old or people who are frequently ill, 0 = the opposite.

Pre-existing poverty: Dummy variable, 1 = household has been poor for an extended period (over 5 years), 0 = the opposite.

The inability to escape poverty: A 5-point Likert scale, ranging from “Strongly disagree” to “Strongly agree”.

To quantify the impact of various factors on the sustainable poverty-alleviation capacity of Hmong households, the study ran two parallel models: Logistic Regression and Multivariate Regression. The combined use of these two models not only identifies influencing factors but also serves as a robustness test, ensuring the consistency and reliability of the empirical results.

Model fit testing: Statistical results show that both models achieved a high degree of fit with the sample data.

For the multivariate regression model, the adjusted R² coefficient of determination is 0.65, indicating that the independent variables explain up to 65% of the variation in household poverty alleviation ability. This is a very high level of explanatory power for cross-sectional studies in the social sciences.

The VIF (Variance Inflation Factor) of all variables is < 10, confirming that the model does not exhibit severe multicollinearity and that the independent variables affect the dependent variable separately.

The Logistic model has a general significance level of Sig. = 0.019 (< 0.05) and a correct prediction rate of 58.6%, indicating that the model is capable of classifying and predicting poverty exit status well based on input characteristics.

The crucial role of human capital.

The results from Table 9 provide the strongest statistical evidence for the study's central hypothesis: Human capital is the key to escaping poverty.

Table 9

Regression analysis of subjective factors affecting the poverty alleviation capacity of Hmong households

Variable	Logistic model		Multivariate regression model		VIF
	Coefficient B	Significance level	Coefficient B	Significance level	
Constant	-5.054	0.000	0.535	0.045	
-Age	0.031	0.045	0.003	0.012	1.342
Educational level	0.051	0.008	0.023	0.000	1.658
Skills and experience	0.042	0.034	0.008	0.230	1.643
The number of workers who are healthy enough to work	0.534	0.054	0.036	0.034	1.423
The notion that poverty is normal.	-0.034	0.976	0.043	0.719	1.034
Many children	0.677	0.326	-0.155	0.231	1.055
There are sick older adults.	0.675	0.230	0.034	0.064	1.032
Chronic poverty status	0.132	0.000	0.045	0.000	1.345
Perceived inability to escape poverty	1.432	0.009	0.542	0.765	1.435
Number of observations (N): 400				Number of observations (N): 400	
Significance level (Sig.): 0.034				Significance level (Sig.): 0.023	
-2 Log likelihood: 123.523				Adjusted R ² coefficient: 0.65	
Correct prediction rate: 58.600				Durbin-Watson coefficient: 1.422	

Note. Data presented in this table are based on the author's own analysis.

Educational attainment was the most statistically significant and consistent variable in both models (Coefficient B = 0.023; Sig. = 0.000 in the multivariate model; Sig. = 0.008 in the Logistic model). The positive coefficient indicates that, as the household head's educational attainment increases, the household's probability of escaping poverty increases significantly. This reflects the mechanism: education not only provides knowledge but also enhances the capacity to receive information, the ability to apply science and technology, and the financial management skills of the farming household. This is empirical evidence reinforcing Schultz's (1961) theory in the specific context of the Hmong people in Thanh Hoa.

Skills and experience are statistically significant in the Logistic model (Sig. = 0.034) with a positive impact coefficient (B = 0.042). This implies that accumulating production experience and professional skills significantly increases *the probability* of transitioning from poverty to poverty

alleviation. However, this variable is less significant in the linear model, suggesting that the impact of experience may not be entirely linear but rather “threshold-based”—meaning that people need to accumulate experience to a certain level of maturity before achieving an income breakthrough.

Health and labor force size: The variable “Number of healthy workers” was statistically significant (Sig. < 0.05) in both models. Given the specific livelihoods based on agriculture and natural resource exploitation in Thanh Hoa's mountainous areas, “physical fitness” remains an important component of human capital.

Challenging stereotypes about “culture of poverty”

These quantitative results provide strong scientific evidence to refute discriminatory views that the Hmong are poor due to “a mindset of dependence” or “a culture of accepting poverty.” The data prove that psychology or beliefs are not the real barriers preventing them from escaping poverty. On the contrary, it is structural factors such as capital shortages, skill shortages, and demographic burden (the variable “Pre-existing poverty” has a significance level of Sig = 0.000) that bind them in a vicious cycle of poverty. The focus should shift from promoting the elimination of a mindset of dependence to addressing resource and opportunity bottlenecks.

Impact of demographic and historical factors

Pre-existing poverty had a substantial impact (Sig. = 0.000). This confirms the existence of a “Poverty Trap” in the study area. Households that have been poor for a long time face significantly greater difficulties in accumulating initial assets to invest in education and production, thereby reducing their chances of escaping poverty compared with newly re-impooverished or near-poor households.

The dependency burden, “large family,” and “having elderly or sick family members,” while showing positive coefficients in the Logistic model (suggesting burden), did not have high or consistent statistical significance levels across the two models. This suggests that within the Hmong community, support from family and kinship networks (social capital) may have partially shared the burden of caregiving, preventing the negative impact of these factors from being as severe as initially hypothesized.

The parallel use of two regression models provided a multifaceted and objective perspective. While the Logistic model indicated that the probability of successful poverty alleviation is heavily influenced by Skills and Willpower (not helplessness), the Multivariate model emphasized the fundamental role of Education and Household Economic History.

Discussion

This study has provided crucial empirical evidence affirming the central role of human capital in Hmong households' capacity for sustainable poverty alleviation in Thanh Hoa. The analysis results allow for three main discussions regarding the relationship between human resource quality and multidimensional poverty:

Firstly, affirming the decisive role of “Intellectual capacity” over “Physical capacity,” both multivariate and logistic regression analyses indicate that educational attainment has the strongest and most statistically significant impact (Sig. = 0.000) on the ability to escape poverty. The analysis results are consistent with the classical theories of Schultz (1961) and Becker (1964).

However, the novelty of this study lies in identifying a “resource paradox”: the Hmong community has an advantage in terms of quantity and health of labor (an abundant labor force, good health), but this advantage does not translate into superior income due to a severe shortage of skills and professional qualifications.

Secondly, the “poverty trap” mechanism stemming from a lack of financial literacy and management skills, and the significant disparity in capital utilization capacity between the two groups of households (40% of households that escaped poverty rated it well compared to 0% of poor households), sheds light on the mechanism of persistent poverty. Qualitative data shows that the most significant barrier is not the lack of access to policy-based loans, but rather the “fear of risk” arising from a lack of understanding of how to do business.

Thirdly, redefining “delaying mentality” from a structural barriers perspective, the study notes that a segment of the population lacks the motivation to escape poverty or is entangled in social vices. However, instead of attributing this to cultural characteristics or inherent “laziness,” the issue should be viewed through the lens of social exclusion and lack of opportunity. Prolonged “giveaway” support policies, combined with limited non-agricultural employment in the locality and language barriers, have inadvertently stifled endogenous motivation.

This result reinforces the observations of the World Bank (2012) and Tran Thi Hanh (2010) regarding the backwardness of ethnic minority groups. However, the study adds a specific perspective in Thanh Hoa: the disruption in the link between vocational training and the labor market. The low rate of professional training in both groups (poor and those who have escaped poverty) shows that the current vocational education system has not truly reached or is not suitable for the actual needs of the Hmong people in the locality.

Solutions to enhance human capital

For the Government, Central Ministries and Departments

The government and relevant ministries and agencies need to improve policies and laws on human resource development in ethnic minority and mountainous regions. The focus should be on policies related to education, vocational training, healthcare, culture, and information and communication.

Increased investment in education and vocational training is needed, especially in infrastructure, equipment, and teaching staff, as well as curriculum and teaching method innovation. Specific policies to attract and train ethnic minority personnel and build a pool of qualified cadres are essential. Local authorities should be directed to effectively implement policies, ensuring they reach the intended target groups and achieve the intended objectives. Monitoring, supervision, and evaluation of effectiveness are necessary to make timely adjustments and additions.

For Thanh Hoa province

Thanh Hoa province needs to concretize the policies and guidelines on human resource development in ethnic minority and mountainous areas into programs and plans suitable for the

locality. Focus on effectively implementing education and vocational training programs and projects to improve the skills of ethnic minority workers.

Strengthen propaganda and raise awareness about the role of human capital, self-reliance, and the aspiration to overcome poverty. Create conditions for people to access information, science and technology, markets, and basic social services. Promote the role of the Fatherland Front and political and social organizations in monitoring, providing feedback, and improving the effectiveness of policy implementation.

For the districts of Mong Lat, Quan Hoa, and Quan Son.

In mountainous districts such as Mong Lat, Quan Hoa, and Quan Son, effectively implementing education and vocational training programs for ethnic minorities is a key task. It is necessary to improve laborers' skills and expertise, creating a foundation for them to increase their income. Simultaneously, strengthening forest management and protection, developing the forestry economy in conjunction with environmental protection, and creating sustainable livelihoods are crucial.

Promoting awareness campaigns on socio-economic development, poverty reduction, eradicating outdated customs, and building a new cultural life is crucial. The roles of village elders, community leaders, and influential individuals should be leveraged to disseminate information, mobilize support for policies and initiatives, promote household economic development, and improve the quality of human resources. To address the identified issues of low educational attainment and language barriers, Thanh Hoa province should research and pilot flexible educational models, particularly bilingual education programs (Hmong and Vietnamese) at the preschool and primary school levels, to enhance children's knowledge acquisition and integration.

To overcome the mentality of dependence and unleash internal strengths, it is necessary to strengthen propaganda and mobilization to raise awareness. In particular, it is essential to leverage the role of village elders, community leaders, clan heads, and other influential figures within the Hmong community, so that they become key figures in mobilizing their fellow villagers to change their mindset and practices, eliminate outdated customs, and actively participate in economic models.

For Hmong ethnic households

Hmong households need to proactively participate in socio-economic development and poverty reduction programs, especially in education, vocational training, and technical training, to improve their skills and knowledge. They need to enhance their self-reliance and avoid dependence on others.

Applying science and technology, transforming the structure of crops and livestock, and shifting production thinking towards a commodity-oriented approach. Participating in cooperative groups and linking with businesses to learn, facilitate sales, and increase income. Strictly adhering to policies and guidelines, building new rural areas, preserving cultural identity, and eradicating outdated customs. Combining economic development and cultural preservation to improve the quality of life.

Conclusion

This study provides a comprehensive overview of the human capital situation of Hmong households in Thanh Hoa province, while analyzing its role in poverty alleviation and sustainable development. The research results show that, despite certain potential, the human capital of the Hmong people still faces many limitations, particularly in terms of educational attainment, vocational skills, and access to information and markets. These limitations hinder socio-economic development, making it difficult for the Hmong to escape poverty and improve their quality of life.

The study highlighted the strong relationship between human capital and the capacity to escape poverty. Specifically, households with higher levels of education, better vocational skills, and greater proactive access to information and markets tend to have higher incomes and more stable lives. Quantitative analysis also confirmed this, showing that education level, vocational skills, and access to capital positively influence Hmong households' ability to escape poverty.

To overcome the aforementioned limitations, a comprehensive set of solutions is needed across multiple sectors, ranging from education, vocational training, and technical training to raising awareness, changing mindsets and production practices, enhancing access to information, markets, and social services, and reforming support mechanisms and policies accordingly. These solutions must be implemented comprehensively, continuously, and with close coordination among all levels, sectors, and society as a whole. Proposed new approaches focus on improving the quality of education and vocational training, closely aligned with the actual needs of the labor market, emphasizing the development of soft skills alongside specialized knowledge, raising awareness, shifting production mindsets from self-sufficiency to commodity production, enhancing access to information, markets, and essential social services, and reforming support mechanisms and policies to provide “fishing rods” instead of “fish,” encouraging self-reliance and self-improvement to escape poverty. These are fundamental, long-term, and strategic solutions aimed at creating a solid foundation and strong impetus for the sustainable and comprehensive development of Hmong households, to narrow the development gap between regions and ethnic groups, and to work towards a just, democratic, and civilized society.

Limitations

The study uses cross-sectional data at a single point in time (2018-2019); therefore, the assertion of a deep causal relationship may be limited. Additionally, the socio-economic context has changed following the COVID-19 pandemic, requiring further studies to update and assess household resilience.

Competing interests

The authors declare no competing interests.

Ethics Committee Approval

The study was conducted in accordance with the Ethical Principles of the American Psychological Association and was approved by the Ethics Committee of the Department of

Science and Technology of Thanh Hoa Province and Hong Duc University, Vietnam. Certificate No. 437/2018/HĐKH-CN-ĐTKHCN.

Consent to participate

Informed written consent was obtained from each participant at the time of recruitment. Participants were informed that they could withdraw from the study at any stage, and their confidentiality was assured.

Acknowledgements

The authors wish to express their sincere gratitude to Hong Duc University for the support provided during this research. We also extend our deep appreciation to the local authorities of Muong Lat, Quan Hoa, and Quan Son districts for facilitating the fieldwork. Special thanks go to the Hmong households who enthusiastically participated in the survey and interviews, providing valuable data for this study.

List of references

1. Becker, G.S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with a Special Reference to Education*. Columbia University Press.
2. Ministry of Education and Training, Ministry of Home Affairs, & Ministry of Finance. (2007). *Joint Circular No. 06/2007/TTLT-BGDĐT-BNV-BTC dated March 27, 2007, guiding the implementation of Government Decree No. 61/2006/ND-CP dated June 20, 2006, on policies for teachers and education management staff working in specialized schools and in areas with challenging socio-economic conditions*.
3. Ministry of Labour, Invalids and Social Affairs (2014), “*Preliminary review and evaluation of 6 years of implementation of Resolution 30a/2008/NQ-CP dated December 27, 2008*” of the Government on the program for rapid and sustainable poverty eradication for poor districts, Hanoi.
4. Chambers, R., & Conway, G. R. (1992). *Sustainable rural livelihoods: Practical concepts for the 21st century* (IDS Discussion Paper 296). Institute for Development Studies.
5. Government of Vietnam (2011), Decree No. 05/2011/ND-CP dated January 14, 2011 on Ethnic Affairs, Hanoi.
6. Government of Vietnam (2015), *Decision No. 59/2015/ND-CP dated November 19, 2015, on promulgating the multidimensional poverty standard applicable for the period 2016 - 2020*.
7. Coley, R.J., & Baker, B. (2013). *Poverty and Education: Finding a Way Forward*. Educational Testing Service.
https://www.ets.org/research/policy_research_reports/publications/report/2013/jzix
8. Cuddy, M., Hongmei, L., & Gute, P. (2008). Factors affecting poverty levels in rural households in Southwest China. *Journal of Socio-Economic and Environmental Research*, 1 (1), 1–15.

9. Thanh Hoa Provincial Party Committee. (2015). *Resolution No. 09-NQ/TU dated November 4, 2015, of the Provincial Party Committee on strengthening the Party's leadership over the work of rapid and sustainable poverty reduction in mountainous districts of Thanh Hoa province until 2020.*
10. Thanh Hoa Provincial Party Committee. (2016). *Key programs to implement the Resolution of the 18th Provincial Party Congress.*
11. Department for International Development (DFID). (1999). *Sustainable Livelihoods Guide.*
12. Ha, N.T.T., Nga, N.V., Phuong, N.T., & Thuc, N.V. (2015). *Overview of poverty reduction studies in Vietnam.* Vietnam Academy of Social Sciences.
13. Hanh, T.T., Hung, P.V., Thinh, N.C., et al. (2010). *Research on the current state of human resources in ethnic minority areas and proposed solutions for human resource development in ethnic minority and mountainous regions.* Vietnam Academy of Social Sciences.
14. Jamieson, NL, Cuc, LT, & Rambo, AT (1998). *Development crisis in mountainous Vietnam.* East-West Centre.
15. Lucas, R. E. (1988). On the mechanism of economic development. *Journal of Monetary Economics*, 22 (1), 3–42. [https://doi.org/10.1016/0304-3932\(88\)90168-7](https://doi.org/10.1016/0304-3932(88)90168-7)
16. Luu, T.T., & Pham, B.D. (2013). The participation of ethnic communities in poverty reduction activities in some mountainous localities in the North. *Journal of Science and Development*, 11 (2), 249–259.
17. Asian Development Bank. (2012). *Assessing Vietnam's Poverty: A Good Start, But Not Yet Complete: Vietnam's Impressive Achievements in Poverty Reduction and New Challenges.*
18. World Bank. (2012). *Vietnam's 2012 Poverty Reduction Assessment Report: A Good Start, But Not Yet Complete.* World Publishing House.
19. Oxfam & ActionAid International in Vietnam. (2013). *Poverty-reduction models in some typical ethnic minority communities in Vietnam (Case studies in Ha Giang, Nghe An, and Dak Nong).*
20. Romer, P.M. (1990). Endogenous technological change. *Journal of Political Economy*, 98 (5, Part 2), S71–S102. <https://doi.org/10.1086/261725>
21. Sao, NX (2020). *Research on factors affecting the sustainable poverty alleviation capacity of ethnic minority households in mountainous areas of Thanh Hoa province today* [Summary report of scientific and technological results of the project]. Thanh Hoa Department of Science and Technology.
22. Schultz, T.W. (1961). Investment in human capital. *The American Economic Review*, 51 (1), 1–17.
23. Thang, N. (Group Leader), & et al. (2011). *Poverty Reduction in Vietnam: Achievements and Challenges.* Vietnam Academy of Social Sciences (VASS).
24. People's Committee of Muong Lat District. (2016). *Project "Stabilising production, living conditions and socio-economic development of Mong ethnic villages in Muong Lat District, Thanh Hoa Province"*.

25. Quan Son District People's Committee. (2016). *Project “Stabilising production, living conditions and socio-economic development of Mong ethnic villages in Quan Son district, Thanh Hoa province” period 2016 – 2020.*
26. People's Committee of Thanh Hoa Province. (2016a). *Decision No. 287-QD/TU dated August 29, 2016, promulgating the Program for agricultural development and new rural construction, period 2016-2020.*
27. People's Committee of Thanh Hoa Province. (2016b). *Decision No. 289-QD/TU dated August 29, 2016, promulgating the Program for Rapid and Sustainable Poverty Reduction in Thanh Hoa Province, 2016-2020 period.*
28. People's Committee of Thanh Hoa Province. (2016c). *Decision No. 291-QD/TU dated August 29, 2016, promulgating the Program for training and utilization of human resources in Thanh Hoa province, period 2016-2020.*
29. Committee for Ethnic Minorities. (2010). *Report of the national conference on “Ethnic Minority Communities in Vietnam and the policy of national solidarity”.*
30. United Nations. (1995). *Report of the World Summit on Social Development (Copenhagen, March 6-12, 1995)* (A/CONF.166/9).
<https://www.un.org/esa/socdev/wssd/2010/documents/key-documents/copenhagen-declaration-and-programme-of-action.pdf>
31. United Nations Development Programme (UNDP). (1990). *Human Development Report 1990.* Oxford University Press.
32. United Nations Development Programme (UNDP). (2020). *Human Development Report 2020: The Next Frontier: Human Development and the Humane Era.*
<http://hdr.undp.org/en/content/human-development-report-2020>