

The Impact of Livelihood Capital on the Poverty Escaping of Poor and Near-Poor Households in Ninh Binh Province

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ABSTRACT

The study was conducted through a survey of 426 poor and near-poor households in Ninh Binh province to determine the impact of livelihood capital on the households' ability to escape poverty. A Binary Logistic model was used, whose independent variables are five types of livelihood capital: human capital, natural capital, financial capital, social capital, and physical capital. The analysis results show that financial capital plays the most crucial role in a household's ability to escape poverty. Specifically, households with higher per capita income and those that received loans tend to escape poverty. It is more difficult for the poor and near-poor households with income from non-agricultural activities to escape poverty than those engaged in agriculture. Additionally, human capital, physical capital, and

social capital all positively impact the ability to escape poverty, while natural capital has a negative impact. The study thus proposes several policies to improve livelihood capital for poor and near-poor households in Ninh Binh province.

Keywords: livelihood capital, impact, poverty escaping, poor and near – poor household, Ninh Binh province.

PROBLEMS STATEMENT

The eradication of poverty and hunger is a uttermost goal for many countries to pursuit, with varying definitions of poverty and hunger employed by different countries and organizations across different stages. In the World Development Report, the World Bank (WB) defines poverty as "the inability to attain a minimum standard of living" (WB, 1990). Sustainable livelihood frameworks, developed by international organizations, serve as a tool to understand poverty alleviation by "capturing the interactions between livelihood assets, vulnerability, and transforming structures" through insights into "people's access to resources and diverse livelihood activities" (Dearden et al., 2002; Farrington et al., 1999; Toner, 2003). A common feature of sustainable livelihood frameworks is their focus on livelihood capital, though the number and names of livelihood capitals may vary. Moser (2006) also highlighted that one of the key policy approaches to poverty reduction involves enhancing access to livelihood capital. Livelihood capital is considered to play a central role in building livelihoods, and increasing access to livelihood capital is a primary concern in supporting livelihoods and alleviating poverty (DFID, 1999). Consequently, many researchers have studied the relationship between poverty and livelihood capital, and the impact of livelihood capital on poverty reduction (Zhao and Lan, 2023; Kristjanson et al., 2004). According to statistics from the Department of Labor, Invalids and Social Affairs of Ninh Binh province, by the end of 2022, the province had 7,438 poor households and 8,829 near-poor households. Through efforts to reduce poverty, in 2022, Ninh Binh province witnessed a number of 3,326 households of near-poverty escaping, achieving a moderate standard of living. This raises the question: What role does livelihood capital play in poverty alleviation in Ninh Binh province? The study uses a Binary Logistic model to determine the impact of various types of livelihood capital on the ability of poor and near-poor households in Ninh Binh to escape poverty. Based on this, the study provides policy recommendations for the eradication of poverty situation in the province.

LIVEHOOD CAPITAL AND ITS ROLE IN POVERTY ESCAPING

Livelihood capitals, or livelihood assets, are referenced in sustainable livelihood frameworks proposed by organizations such as CARE, DFID, UNDP, and Oxfam which originate from the livelihood concept by Chambers & Conway (1991), "A livelihood comprises the capabilities, assets (stores, resources, claims, and access), and activities required for a means of living." Livelihood assets refer to the resources of different households and are categorized into five types: human, social, financial, natural, and physical (DFID, 1999).

H (Human Capital):

This represents skills, knowledge, labor capabilities, and health, which enable individuals to

pursue different livelihood strategies and achieve their livelihood goals (DFID, 1999). Human capital plays a particularly important role for the poor, as it is their fundamental asset and the one under their most control in comparison with other types of livelihood capital. That human capital is essential for economic growth and development explains why many studies focus on the relationship between human capital and poverty reduction (Ukeje et al., 2020; Olopade et al., 2019).

S (Social Capital):

This encompasses social resources such as networks, connections, participation in groups and associations, trusted relationships, and access to social institutions, which people rely on to pursue their livelihoods (DFID, 1999). Social capital can play a crucial role in poverty alleviation strategies in various ways. Firstly, it facilitates investment strategies, as strong community organizations can enhance the effectiveness of public policies and recovery strategies. Secondly, if the poor can act collectively and strengthen alliances with external agents, they will have a better chance of mobilizing the necessary resources for their fight against poverty (Warren et al., 2001).

P (Physical Capital):

At household level, physical capital can include productive assets (e.g., tools, equipment), household assets (e.g., housing, furniture, vehicles), and reserves (e.g., stored food, livestock) (Siegel & Alwang, 1999). Livestock and food reserves particularly stand out among household physical capital (Binswanger & Rosenzweig, 1993; Devereux, 1993; Carter & May, 1999) because of their high liquidity and sellability for consumption. Housing and relevant physical capital are prerequisites for asset accumulation (Cook, 2006; Moser, 2006; Solimano, 2006). At the community level, physical capital includes basic infrastructure (transportation, accommodation, water, energy, and communication) (DFID, 1999). In terms of the same income, poverty in areas lacking infrastructure and services tends to result in worse outcomes compared to poverty in areas with adequate infrastructure and services (Mitlin, 2003).

F (Financial Capital):

Available financial resources (savings, credit, remittances, pensions) provide individuals with various livelihood options (DFID, 1999). Compared to other capitals, financial capital receives significant attention from policymakers. This is rational because of its critical importance as one of the most effective tools for escaping poverty (Moser, 2006). Mahajan (2006) argues that access to financial capital is increasingly crucial as other forms of capital are "financialized" one after another. With the expansion of markets across most regions globally, assets traded or maintained traditionally through various systems have been being financialized. Despite its importance, financial capital tends to be least accessible for the poor; therefore, other forms of capital become extremely important for them (DFID, 1999).

N (Natural Capital):

Natural Capital refers to the reserves of natural resources from which useful resource flows for livelihoods are derived (e.g., land, water, wildlife, biodiversity, environmental resources) (DFID, 1999). In DFID's sustainable livelihood framework (1999), the relationship between natural capital and vulnerability context is particularly intertwined. Many shocks devastate the

livelihoods of the poor: processes that degrade natural capital (e.g., forests destroyed by wildfires, agricultural land damaged by floods and earthquakes) and seasonal variability which is largely due to changes in the value or productivity of natural capital within a year. Obviously, natural capital is crucial for those whose livelihoods partially or entirely depend on resources (agriculture, fisheries, and mining, etc.) (Yuqing et al., 2023). In addition, the importance of natural capital extends beyond this context. None of us can survive without support from the environment and food produced from natural capital. Human health (human capital) is negatively impacted in areas with poor air quality caused by industrial activities or natural disasters (e.g., wildfires, volcanic eruptions). Land tenure can provide valuable income sources for investment, retirement, or security in case of unemployment (Cotula et al., 2006).

METHODOLOGY

Data Collection Method

Secondary information includes theories related to the research topic and socio-economic information collected from officially published documents. Sources of publication are from books, newspapers, scientific journals, and relevant authorities in Ninh Binh province. Primary information is collected through direct surveys of poor and near-poor household heads using questionnaires. The sample size is determined using Yamane's formula (1967).

$$n = N / (1 + N \times e^2)$$

In which:

- N is the total population,
- n is the required sample size to ensure representativeness,
- e is the allowable error margin (e.g., for a significance level of 95%, e=0.05).

With a total of 19,593 poor, near-poor, and recently escaped-poor households in Ninh Binh province, the minimum required sample size is 392 households. The study conducted surveys with 450 households, of which 426 surveys met the requirements.

Binary Logistic Model

This paper uses binary logistic model as an appropriate technique to observe the likelihood of a household for being poor or escaping poverty. The logistic function can be written as:

$$Y = \text{Ln} [P/(1-P)] = \beta_0 + \beta_i S_i + U_i$$

In a *logistic regression*, the *dependent variable Y only has* two categories: 1 (escaping poor household) and 0 (poor and near poor household). *S_i* were the predictors variable or independent variable (livelihood capitals).

Table 1: Determinants of poverty used in the modules and their values

Livelihood capital	Variables	Description	Definition
	<i>Dependent variable</i>		

	Y	Household type	1 = escaping poor household 0 = poor and near poor household
Independent variable			
Human capital	S ₁ (Edu)	Years of schooling of head of HH	Continuous
	S ₂ (Hhsize)	Size of HH	Continuous
Natural capital	S ₃ (land)	Total land area	Continuous
	S ₄ (water resource)	HH also uses natural water sources for drinking	1 = Yes 0 = No
Physical capital	S ₅ (housing type)	The type of house HH lives in is solid	1 = Yes 0 = No
	S ₆ (Hhlivestock)	Value of HH's livestock	Continuous
	S ₇ (Hhtransport)	HH owns motorbikes or electric vehicles	1 = Yes 0 = No
	S ₈ (Hhied)	households owns intelligent electronic devices	1 = Yes 0 = No
Financial capital	S ₉ (income)	Monthly income per capita	Continuous
	S ₁₀ (loan)	HH received loans from financial institutions	1 = Yes 0 = No
	S ₁₁ (non-farm)	HH has income from non-farm activities	1 = Yes 0 = No
Social capital	S ₁₂ (Hhgroup)	HH participates in groups, association	1 = Yes 0 = No
	S ₁₃ (support)	HH received support (eg: money, production knowledge) from community	1 = Yes 0 = No

RESEARCH RESULTS AND DISCUSSION

Socio-economic Characteristics of Respondents

The study was conducted with 426 households, including poor, near-poor, and recently escaping - poor households, with the proportion of surveyed poor and near-poor households accounting for 69.72%. The respondents were household heads, who represent the households and are usually the decision-makers within the family. The socio-economic characteristics of these households are presented in the following table:

Table 2: The socio-economic characteristics of poor and near-poor households

Characteristics	Quantity	Proportion
	(individuals)	(%)
1. Age of household head		
From 26 to 35	64	15,02
From 36 to 45	116	27,23
From 46 to 55	78	18,31
≥ 55	168	39,44
2. Gender of household head		
Female	178	41,78
Male	248	58,22
3. Type of household		
Poor, near-poor	297	69,72
Recently-escaping poor	129	30,28

Source: result of the investigation (2023)

The average age of the household heads is 51.83 years, with a significant proportion being over 36 years old, in which 39.44% of the household heads are over 55 years old. This older age group has substantial experience in production activities, especially in agriculture; however, their age also poses challenges in learning and accessing new technologies and markets. In Vietnam, there is still a prevalent notion of male dominance, where it is traditionally believed that men should be the family's primary breadwinners. Despite this, in Ninh Binh, the proportion of female interviewees accounts for 41.78%. Although this figure is lower than that of their male counterparts, it indicates the increasing importance of women in household economics.

Result of Binary Logistic Model

To analyze the impact of livelihood capitals on the ability of poor and near-poor households in Ninh Binh Province to escape poverty, the study employs 13 variables representing different livelihood capitals. The results of the Binary Logistic model are presented as follows:

Table 3: Result of Binary logistic model

Variable	B	S.E.
S ₁ (Edu)	0,222*	0,121
S ₂ (Hhsize)	0,558**	0,239
S ₃ (land)	0,000	0,000
S ₄ (water resource)	-1,082*	0,624
S ₅ (housing type)	0,422	0,678
S ₆ (Hhlivestock)	0,064**	0,033
S ₇ (Hhtransport)	1,087	1,015
S ₈ (Hhied)	1,600**	0,720
S ₉ (income)	9,318***	1,579
S ₁₀ (loan)	2,359***	0,713
S ₁₁ (non-farm)	-2,847***	0,872
S ₁₂ (Hhgroup)	2,756	2,069
S ₁₃ (support)	2,274***	0,742
Constant	-23,910***	25,862
N	426	
-2log likelihood	77,800	
Pseudo R ²	0,917	
LR chi2	444,674	
Prob>chi2	0,000	

* Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

The Chi-squared (Chi2) coefficient shows a very high significance level ($p = 0.000$), indicating that the model is appropriate and has a high explanatory power. The Pseudo R² value is 0.917, which is very high, demonstrating that the regression model has a high appropriateness.

Regression testing based on the significance level (Sig.) of the Wald test indicates the following: except for variables S_3 (land), S_5 (housing type), S_7 (Hhtransport), S_{12} (Hhgroup) which have the value Sig. > 0.1, so these variables are not significant in the regression model. The regression coefficients of the variables S_1 (Edu), S_2 (Hhsize), S_6 (Hhlivestock), S_8 (Hhied), S_9 (income), S_{10} (loan), S_{13} (support) are positive; this indicates that poor and near-poor households where the head of the household has a high level of education, has a large household size, has a higher value of livestock, has smart electronic devices, has a higher income, has access to loans and community support are more likely to escape poverty.

The negative signs of the regression coefficients for the variables S_4 (water resource) and S_{11} (non-farm) indicate that households still rely on rainwater, river, stream, or pond water for drinking, and those whose income is derived from non-agricultural livelihood activities tend to be poor or near-poor. From the perspective of livelihood capital, the potential for poverty escaping among poor and near-poor households in Ninh Binh province can be assessed as follows:

Financial Capital:

The research underscores the significant role of financial capital in the poverty escaping efforts of poor and near-poor households. As incomes of these households increase and they gain access to credit, they tend to escape poverty. Obviously, poverty alleviation must firstly aim at improving financial capital for households, specifically by increasing incomes and facilitating access to credit for poor and near-poor households. Policies aimed at income improvement need to be comprehensive, as the income of the poor are impacted by factors such as educational qualification, household size, number of dependents, assets, and credit (Mai Thi Hong Dao, 2016; Nguyen Hong Ha & Kien Thi Minh Nguyet, 2021). The credit policies for the poor currently focus on addressing issues such as housing construction and repair, access to clean water, business production, education, and healthcare. In reality, the majority of poor and near-poor households borrow funds to address immediate needs such as building or repairing houses and covering expenses like medical costs and daily consumption, rather than investing in business production. Therefore, credit for the poor should be accompanied by support for investment and effective loan management. Additionally, credit policies should not only focus on poor and near-poor households but also be expanded to include households that have recently escaped poverty to ensure that these households can access preferential loans to develop production and achieve sustainable poverty escaping. Research on financial capital also indicates that poor and near-poor households engaged in non-agricultural activities tend to find it more challenging to escape poverty compared to those engaged in agriculture. This can be explained by the lower education of laborers in poor households, especially women and children, who often engage in informal work. Many scholars have demonstrated that the informality independently contributes to poverty in developing countries, with a direct correlation between informality and poverty rates in many regions (Nguyen Phi Son, 2013). In such cases, income from non-agricultural activities clearly does not help households escape poverty, as they not only earn low incomes from informal work but also endure unfavorable conditions including inequality, exploitation, and vulnerability to abuse (ILO, 2012). Therefore,

policies should be developed to create formal employment opportunities suitable for the poor, supporting them in finding formal employment through training or employment services.

Natural Capital:

Natural capital, represented by land fund and water resources used by households, in which water resource affects their ability to escape poverty. Specifically, households that rely on natural water sources from rainwater, ponds, lakes, and rivers for drinking tend to be poor or near-poor. This finding aligns with previous research by UNICEF (2020) and Pham Thi My Duyen (2020). The use of unsanitary water sources increases the risk of skin and gastrointestinal diseases among laborers, thereby raising healthcare costs for poor households and making it even more challenging for them to escape poverty. Thus, in addition to providing financial support for clean water and equipping poor households with water filtration devices, it is crucial to enhance awareness of the poor about the dangers of using unsanitary water sources. The research also highlights differences in land area between two groups of households, in which the poor and near-poor households lack advantage in land resources. Similar to the findings by Pham Thi My Duyen (2020), Le Dien Nghi & Nguyen Quyet Thang (2022), it is that the lack of productive land or less fertile land exacerbates the plight of the poor. Land plays a crucial role for poor households, particularly since their livelihood activities are primarily agricultural. Therefore, land policies for the poor in Ninh Binh province should consider utilizing public land for cultivation by poor and near-poor households, redistributing abandoned agricultural land to the poor, and improving the fertility of less productive agricultural areas. Additionally, it is essential to enhance the transfer of technical advancements, production knowledge, and training to farmers to increase the productivity of agricultural land.

Physical Capital:

Physical capital, represented by the type of house, specific assets, and the value of livestock and poultry. The research indicates that households owning high-value livestock and poultry, as well as smart electronic devices, tend to escape poverty. Numerous FAO reports have emphasized the necessity of livestock for the poor. Livestock farming plays a crucial role in supporting the livelihoods of impoverished farmers. Small livestock and poultry require less investment to purchase and maintain compared to larger livestock. Livestock farming helps the poor improve their economic status by allowing them to expand their herds and accumulate sufficient capital to transition to raising larger, more valuable livestock (FAO, 2002; Otte & Upton, 2005). Basic smart electronic devices mentioned in the study, such as televisions, phones, and computers,.. are significant in helping households escape poverty. Ownership of these devices enables households to regularly access information on policies, business production, and education, as well as job opportunities. Therefore, policies aimed at improving the physical capital of poor and near-poor households should focus on providing support for breeding, feed, and enhancing production knowledge; assisting the poor in accessing smart electronic devices and using them effectively.

Human Capital:

Human capital in this study is represented by household size and the educational attainment of the household head. Households with more members and a higher number of years of schooling of the household head tend to escape poverty. Krishna (2004) synthesizes various perspectives on the impact of household size on the ability to escape poverty. Some point to

the disadvantages of large household sizes, while others emphasize the benefits for rural households of having more healthy laborers. The research findings also contradict the assertion by Makame and Mzee (2014) that household size negatively impacts poverty status, with the probability of becoming impoverished increasing with each additional member. In this case, a large household size may imply a higher number of labor-capable members, increasing the number of potential earners. The number of schooling years represents the educational level of the labor force, specifically the household head. This finding aligns with the conclusion of Bilenkisi et al. (2015), who demonstrated that the educational attainment of the household head significantly impacts the poverty status and living standards of the household. The educational level of the household head is an important factor in escaping poverty, as it is related to cognitive ability, economic management, and employment opportunities (Trinh Thanh Nhan & Trinh Anh Khoa, 2023). Impoverished individuals, particularly children in poor households, often face limited access to education, restricting their opportunities for development, knowledge acquisition, practical skills, and social networks. This is because parents cannot afford school fees and need their children to work. The lack of school infrastructure, teachers, and the distance from home to school also prevents children from poor households from attending school (Tilak, 2001). Therefore, in addition to investing in school infrastructure in disadvantaged areas, existing policies on tuition fee waivers and educational subsidies for the poor need to be further improved to help poor households afford educational costs.

Social Capital:

When studying the social capital of households, researchers often focus on whether households participate in social organizations such as the Farmers' Association, the Women's Union, and the Youth Union (Pham Thi My Duyen, 2020; Tran Ba Uan, 2020). Surveys of poor and near-poor households reveal that most of these households participate in local socio-political organizations. Therefore, this study examines community cohesion through the support that poor and near-poor households receive from the community. This support can be material, such as cash and in-kind donations, or non-material, such as sharing relationships, experiences, and production skills. The results show that poor and near-poor households receiving community support tend to escape poverty. This finding reinforces the assertion by Agyeman et al. (2019) that social capital is crucial for closely-knit small communities, as it acts as an informal safety network for the poor. Consequently, activities that enhance local community solidarity, such as cultural and artistic movements and public sports events, are necessary. Additionally, mobilizing support from organizations and individuals for poor and near-poor households should ensure transparency, appropriateness, and target the right beneficiaries.

CONCLUSION

Research on the role of livelihood capital in the ability of poor and near-poor households to escape poverty in Ninh Binh province indicates both positive and negative impacts. A deeper analysis of the constituent factors of livelihood capital provides a multifaceted perspective on its effects in reducing poverty. Specifically, financial capital includes per capita income, access to loans, and income from non-agricultural activities. Households with higher per capita income and access to loans tend to escape poverty, whereas households with income derived from non-agricultural activities tends to be poor or near-poor ones. Physical capital factors, such as the

size of livestock holdings and ownership of smart electronic devices, and human capital factors, such as the number of schooling years of the household head and household size, as well as social capital indicated by community support for poor and near-poor households, all positively impact the ability to escape poverty. Conversely, natural capital, represented by the water sources used by households, shows that households relying on natural water sources for daily activities tend to remain poor or near-poor. Based on these findings, several policy recommendations to improve livelihood capital are proposed. These include credit and employment policies to enhance financial capital; clean water policies to ensure access to safe water; agricultural extension policies to increase livestock efficiency; support for smart electronic devices to improve physical capital; educational and training policies to enhance human capital; and initiatives to strengthen community cohesion and mobilize community support for the poor to improve social capital.

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