Access to credit for vulnerable people: An emerging market investigation

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Abstract

This paper addresses the limited access to formal credit among vulnerable rural households in Vietnam—a persistent challenge despite the government's efforts to promote financial inclusion. The research aims to identify key socio-economic determinants that affect the ability of vulnerable groups to access official credit channels. Using data collected from a survey of 1,200 rural households across eight provinces representing Northern, Central, and Southern Vietnam, the study employs a binary Logit regression model to estimate the probability of successful credit access. The findings reveal that the highest education level within a household and household income positively influence access to formal credit. In contrast, the education level of the household head, land ownership status, and residence in the Central region negatively affect the likelihood of receiving loans. These results underline the complexity of credit accessibility in rural areas and suggest that improving financial literacy and revising legal frameworks are essential to enhance credit outreach. The paper concludes with policy recommendations to strengthen the legal and institutional foundations for inclusive credit programs tailored to the needs of Vietnam's vulnerable populations.

1. Introduction

Vietnam, transitioning from a poor and backward economy after national reunification, is now considered by the World Bank to be "a successful development story." Economic reforms since 1986, combined with favorable global trends, have rapidly helped Vietnam develop from one of the poorest countries in the world to a lower middle-income country within just

one generation. From 2002 to 2020, GDP per capita increased 3.6 times, reaching nearly 3,700 USD. The poverty rate (based on 3.65 USD/day according to the standard of PPP in 2017) decreased from over 14% in 2010 to 3.8% in 2020 [1].

Although the coverage of the credit institution system has grown strongly in recent years through a network of branches and transaction offices spread across the country, providing a variety of banking products and services for people and businesses, while urban residents and large businesses have relatively easy access to services provided by banks, rural and remote population groups, remote areas, and small and medium-sized enterprises are facing significant obstacles [2] According to statistics from The Little Data Book on Financial Inclusion 2018, the rate of borrowing in Vietnam is high compared to other countries in the region, with the official borrowing rate through credit institutions reaching 21.7%. Borrowing through friends and family in Vietnam (29.5%) is similar to that in other countries. It is evident that access to formal credit services in Vietnam is still low compared to the average of other countries. Consequently, the existence of "black credit" – informal credit activities outside the scope of legal regulation alongside the formal financial sector under state management is unavoidable [3].

Promoting credit development for vulnerable groups is extremely important. The first and most urgent issue is the improvement of policies and legal frameworks. Only when there is a complete legal framework can credit institutions and service providers have a basis to offer products and services to customers. In reality, the legal framework for providing services is still inadequate, especially for technology-based services, which are lacking and have inappropriate regulations, so it is necessary to focus on perfecting the legal framework [4].

In recent years, the Government has developed and issued many policies supporting financial inclusion. The Non-Cash Payment Promotion Scheme in Vietnam, issued by the Prime Minister, has been implemented since 2006 and is being carried out for the 2016-2020 period. The Microfinance System Development Project in Vietnam, approved by the Prime Minister in 2011, is set to continue until 2020. The Project to Enhance Banking Service Access for the Economy aims to increase access to basic banking services that are suitable for the needs, quality, and reasonable costs for most adults and businesses, especially those in rural, remote, and mountainous areas, as well as small and medium-sized enterprises. This is based on a system of comprehensive finance operating safely, soundly, responsibly, and sustainably. On February 20, 2020, the Prime Minister signed Decision No. 149/QD-TTg approving the National Financial Inclusion Strategy until 2025, with a vision towards 2030.

Along with this, the Government has implemented several initiatives to increase the accessibility of financial services, especially through national target programs to reduce poverty, policy credit programs for target groups and priority areas. These financial inclusion initiatives focus strongly on social policy targets and do not fully apply market mechanisms [5]. Domestic commercial banks have also quickly grasped trends and opportunities to develop services on technology platforms, enhancing and diversifying services through promoting e-finance, internet banking transactions, and implementing mobile credit activities to bring financial services and products to a wider population at lower costs quickly, safely, and conveniently [4].

It is evident that promoting credit development for vulnerable groups is extremely important in both theoretical and practical aspects in Vietnam. Based on this reason, the research group decided to choose the topic: "Enhancing Access to Credit for Vulnerable Groups in Vietnam - From the Perspective of Financial Inclusion." By focusing on analyzing fundamental theoretical and practical issues in implementing credit policies for vulnerable groups in Vietnam, the research team identified key contents to enhance access to credit for vulnerable groups in Vietnam from the perspective of financial inclusion.

The structure of this paper is as follows. Section 2 reviews the relevant literature on access to credit for vulnerable groups, emphasizing both theoretical foundations and empirical approaches. Section 3 outlines the research methodology, including data collection, sample description, and the specification of the Logit regression model used for analysis. Section 4 presents empirical results, discusses the key findings, and interprets the implications of the estimated coefficients. Finally, Section 5 provides concluding remarks and policy recommendations to enhance formal credit access for vulnerable populations in Vietnam.

2. Literature Review

The work "Access to Consumer Finance for Vulnerable Groups: One Size Does Not Fit All" by Tetra Tech International Development [4] points out that access to credit is defined as the availability of a means or opportunity to successfully access consumer finance. The challenges to credit operations for vulnerable groups include poor supporting infrastructure, unfavorable enabling environments, strict credit checks, low literacy levels, and previous negative experiences, making it a practical challenge and thus limiting opportunities for successful access to consumer finance. Many consumers lack access to the necessary supporting infrastructure for most financial models. Additionally, the research indicates that the enabling environment is not always favorable for the deployment of consumer finance and can have a more significant impact on vulnerable groups. Low levels of education and literacy create gaps in consumers' understanding of their rights and benefits and how to access consumer financial products.

Empirical studies related to access to credit for vulnerable groups can be categorized into three main groups. The first group uses binary models to analyze the factors influencing access to formal credit. Specifically, Mohamed [6] and Gray [7] use the Logit model to identify the factors affecting the ability to access microcredit for households in Zanzibar and the Philippines. The factors influencing access to credit include age, education level, gender, income, and the level of awareness about the availability of microcredit. Mohamed [6] concludes that information about credit sources affects the ability to access microcredit in Zanzibar. Gray [7] concludes that young farmers and fishermen have less access to credit in the Philippines. Therefore, the authors suggest that to increase access to credit for farmers, microcredit programs need to focus

on young people in rural areas and raise awareness among vulnerable groups about the availability of microcredit programs, especially targeting residents in remote and difficult areas.

Recent studies on the issue of credit access for the poor include Okurut [8] in South Africa, Lensink and Pham [9], and Phan et al. [10] in Vietnam. Besides the factors affecting access to formal credit for farmers, the studies' results also show that informal credit coexists, and the factors influencing the amount of informal loans are identified. However, the factors affecting access to formal and informal credit are independently determined, and the interaction between formal and informal credit markets is overlooked.

The second research group examines access to credit with the presence of sample selection bias in loan decisions and loan amounts. Specifically, Duong and Izumida [11], Okurut et al. [12], and Swain [13] estimate loan decisions and loan amounts simultaneously using the two-step Heckman model. These research results help explain the household's access to credit and the credit limits on loan amounts. Specifically, the ability to access microcredit programs by households depends not only on their observable characteristics but also on unobservable factors. Ignoring unobservable characteristics such as reputation or entrepreneurial spirit in the loan selection process can lead to biased estimation results in the loan amount determination model. Additionally, Duong and Izumida [11] also mention the interaction of formal and informal credit in considering factors affecting access to credit in Vietnam. To control the interaction between the two markets, with the argument that rural households can borrow from either formal or informal sectors, or from both simultaneously, the authors use the Tobit model to estimate the factors affecting the loan amounts of formal and informal credit. However, the authors estimate the two equations independently, so the interaction of formal and informal credit is not identified.

In the third research group, Zeller [14] is one of the pioneers in providing a framework for analyzing the factors affecting access to formal and informal credit in rural credit markets. Although the author has not provided empirical evidence to conclude the interaction between formal and informal credit in accessing capital for farmers, Zeller [14] emphasizes the significance of the interaction between formal and informal sectors in rural credit markets. This perspective is further studied by Kochar [15], Diagne [16], and Swain [13], where the authors attempt to clarify the interaction between credit supply sectors using different basic assumptions to analyze the factors affecting access to credit and the loan amounts of farmers. Kochar [15] uses the collateral fee to measure transaction costs in lending activities. Using credit access models for formal and informal credit markets, Kochar [15] provides empirical evidence that informal credit access plays an important role in accessing formal credit. Similarly, Swain [13] reaffirms the previous findings in Kochar [15]. Furthermore, Diagne [16] uses a simultaneous estimation model of access to formal and informal credit based on the assumption that formal and informal credit can perfectly substitute each other in a free correlation, concluding that formal and informal credit interact in rural credit markets. Despite some limitations in the assumptions and estimation methods, the findings of these studies mark an important milestone in empirical research on rural credit markets [5, 17].

An important point emerging from the review of these documents is that formal and informal credit coexist in rural markets, but research on credit access often considers these markets independently. This is a limitation in explaining the issue of access to credit for vulnerable groups. Specifically, when in need of capital, will vulnerable groups choose formal or informal credit? And if they have already borrowed from one source, can they access the other source? In other words, do vulnerable groups choose formal or informal credit when they need capital? There are two theoretical bases to answer this question. First, in the condition of credit constraints, vulnerable groups will approach formal credit, but asymmetric information excludes some of them from the screening process because they lack collateral or the responsibility to repay the loan. These households are then forced to choose informal credit. Proponents of this view believe that an informal loan is the last resort households can seek in rural credit markets [3, 15, 18].

Another view suggests that informal lenders have a comparative advantage over formal lenders in providing loans to households because informal lenders have better information to monitor and manage their customers [2, 19]. This means that informal lenders can better control moral hazards and repayment commitments. According to this view, informal lenders are preferred over formal lenders because informal loans may be cheaper compared to formal loans [5, 20]. This emphasizes that the high transaction costs associated with formal loans may drive people to seek informal credit. If the transaction costs associated with informal credit are lower than those of formal credit, households will choose informal credit first. In the short term, the simple screening mechanism that informal lenders use in loan decisions and the formal contracts that do not require collateral support this view.

3. Methodology
3.1. Data Description
The survey sample includes 1,200 rural households belonging to vulnerable groups in eight provinces across three regions of Vietnam: the North, Central, and South regions. These provinces are Thai Binh, Thanh Hoa, Lang Son, Son La, Quang Nam, Dak Lak, Can Tho, and Dong Nai. The provinces were selected to ensure they reflect the credit status of households across different regions of the country, with varying characteristics and levels of rural development. In addition to distributing survey questionnaires, the research team also conducted in-depth interviews with households in certain communes, which are representative units for credit activities related to vulnerable groups. The aim was to gather basic information, understand the credit situation of households, and explore their opinions and aspirations regarding credit activities with a high level of reliability.

Table 1.
Survey sample related to income and savings levels.

Province	District	Number of responders	Province	District	Number of responders
1. Thai Binh	1. Tien Hai	50	5. Quang Nam	13. Ha Lam	50
	2. Kien Xuong	50		14. Que Son	50
	3. Vu Thu	50		15. Tien Phuoc	50
2. Thanh Hoa	4. Dong Son	50	6. Dak Lak	16. Buon Ho	50
	5. Thieu Hoa	50		17. Krong Ana	50
	6. Hau Loc	50		18. Krong Pac	50
3. Lang Son	7. Loc Binh	50	7. Can Tho	19. Thot Not	50
	8. Cao Loc	50		20. Thoi Lai	50
	9. Van Quan	50		21. Red Flag	50
4. Son La	10. Mai Son	50	8. Dong Nai	22. Long Khanh	50
	11. Muong La	50		23. Long Thanh	50
	12. Thuan Chau	50		24. Xuan Loc	50

Table 2.
Survey sample statistics of vulnerable households by income level and savings.

Criteria	Number of households	Percent	Total income	Total savings	Average income	Average savings
		%	Million dong	Million dong	Million VND/household	Million VND/household
Do not lend	206	17.17	1,706	448.9	8.28	2.18
There is no need	142	11.83	1,292	334	9.10	2.35
Demand	64	5.33	414	115	6.46	1.79
Lending	994	82,83	16,959	4918.71	17.06	4.95
Official loans only	932	77.67	14,243	4536.7	15.28	4.87
Only informal loans	13	1.08	143	32	11.00	2.46
Borrow both	49	4.08	2,573	350.01	52.51	7.14
Total	1,200	100	18,664	5.368	15.55	4.47

3.2. Model Specifications

It is important to affirm that accurately measuring and assessing the accessibility of credit for vulnerable households based on the study of influencing factors is extremely useful for financial institutions specializing in policy loans, as well as policymakers, in identifying the level of impact of the policy on the target audience. To evaluate the ability of vulnerable households to access loans, the research team used a model to measure the probability of successful loan implementation for vulnerable people with impact variables that genuinely reflect the socio-economic life and production and business prospects of the household.

The logit regression model is applied to identify factors affecting households' ability to access loans. This is a typical model serving the goal of measuring the probability of successful loan implementation for disadvantaged people in the 8 surveyed provinces. The dependent variable, in this case, is a binary variable - that is, the research variable has two expressions (dichotomous), representing the household's ability to access loan capital, assigned a value of 1 if the household successfully borrows capital and 0 if the household is not approved for a loan by the bank. When the dependent variable is binary, we cannot apply ordinary least squares (OLS) regression because it would violate the assumptions, which is most obvious when the dependent variable has only two values. It is not really appropriate to assume that the residuals have a normal distribution; instead, they should have a binomial distribution, and this will lose the statistical power of the tests in ordinary regression. The Logit model is a nonlinear model, measured based on the maximum likelihood method. Besides, the Logit regression model will give predicted values falling between [0, 1]. With some of the above advantages, the Logit model is quite commonly used in cases where the dependent variable is a binary variable.

The general Logit model has the following form: $p_i = P(Y=1/X_i, Z_i, V_i) = E(Y/X_i, Z_i, V_i)$: Probability that the disadvantaged will have can successfully access loans. We have:

$$p_i = \frac{e^{f(Xi,Zi,Vi)}}{1+e^{f(Xi,Zi,Vi)}} \leftrightarrow ln(\frac{p_i}{1-p_i}) = L_i = f(Xi, Zi, Vi) \text{ (1)}$$

- In there:

Y (dependent variable - binary): ability of vulnerable people to access credit (= 1 if the household successfully borrows capital, = 0 if the household cannot borrow capital);

X_i (independent variable): represents basic characteristics of the household;

Z_i (independent variable): represents the economic characteristics of the household;

V_i (independent variable): represents regional characteristics (external conditions).

$f(X_i, Z_i, V_i)$: linear function of factors X_i, Z_i, V_i.

L_i: ratio of the probability of a household successfully borrowing capital compared to the probability of not being able to borrow capital.

- Expanding (1) with selected explanatory variables, we obtain:

$$L_i = \beta_0 + (\beta_1 *nhankhau + \beta_2 *gioitinh + \beta_3 *hvanchuho + \beta_4 *hvancaonhat) + (\beta_5 *nghe\_nong + \beta_6 *thunhap + \beta_7 *tietkiem + \beta_8 *dt\_dato + \beta_9 *dt\_sxkd + \beta_{10} *chu\_sohuu) + (\beta_{11} \quad (2)$$
$$*mien\_bac + \beta_{12} *mien\_trung) + u_i$$

The choice of explanatory variables for the above model is based on theory, previous research and available data sources. Theory shows that a household's ability to access credit is influenced by socio-economic factors such as demographics, gender and education level of the household head, the highest level of education of the household, main occupation of household, income, savings, residential land area, production and business land area, form of house and land ownership and regional characteristics (impact of external conditions). These factors are particularly important as they affect both the household's need for loans and the lending decisions of financial institutions, which in turn are the basis for financial institutions to evaluate the creditworthiness of loan applicants.

Table 3.
Survey sample statistics of vulnerable households by income level and savings.

	Explanatory variables	Describe	Expected correlation
1	Household size (nhankhau)	Total number of members of the household	-
2	Gender of household head (gioitinh)	Dummy variable: 1 = Male 0 = Female	+
3	Education of the head of household (hvanchuho)	1 = No degree 2 = Primary 3 = Middle school 4 = High school 5 = College, university 6 = Postgraduate	+
4	Highest education of the household (hvancaonhat)	1 = No degree 2 = Primary 3 = Middle school 4 = High school 5 = College, university 6 = Postgraduate	+
5	Main occupation (nghe_nong)	Dummy variable: 1 = Agriculture 0 = Non-agricultural[1]	+
6	Income (thunhap)	Continuous variable: million VND	+
7	Savings (tietkiem)	Continuous variable: million VND	+
8	Residential land area (dt_dato)	Continuous variable: m^2	+
9	Area of production and business land (dt_sxkd)	Continuous variable: m^2	+
ten	Form of home ownership (chu_sohuu)	Dummy variable: 1 = Owner 0 = Not owner	+
11	Regional characteristics	Dummy variable (2): mien_bac; mien_trung	
a	mien_bac = 1 mien_trung = 0	Northern region[2]	+
b	mien_bac = 0 mien_trung = 1	Central[3]	-
c	mien_bac = 0 mien_trung = 0	Southern[4]	+

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[1] Forestry, fisheries, industry, services.
[2] Thai Binh, Thanh Hoa, Lang Son, Son La.
[3] Quang Nam, Dak Lak.
[4] Can Tho, Dong Nai.

4. Results and Comments

The empirical findings indicate that the application of the Logit model is appropriate for the research context, based on the following statistical evidence. First, the Wald Chi-squared test statistic, with 16 degrees of freedom, is 91.79 and statistically significant at the 1% level (P-value = 0.000), thereby rejecting the null hypothesis that all regression coefficients are jointly equal to zero. Second, model selection criteria further support the suitability of the Logit model, with a log-likelihood value of -504.327, and optimal values for the Akaike Information Criterion (AIC = 1034.654) and the Bayesian Information Criterion (BIC = 1100.825). Third, the Pearson Chi-squared goodness-of-fit test, with 1172 degrees of freedom, yields a statistic of 1176.11 (P-value = 0.4854), indicating that the model specification is consistent with the observed data and the null hypothesis of model adequacy cannot be rejected.

Additionally, the model demonstrates strong predictive power, correctly classifying 82.92% of the observations. Among the 12 explanatory variables included in the model, five are statistically significant at conventional levels. Specifically, the variable *chu_sohuu* is significant at the 1% level, while *hvanchuho*, *hvancaonhat*, *nhinhhap*, and *mien_trung* are statistically significant at the 5% level.

Table 4.
Logit regression results.

Dependent variable: Y Log - reasonable = -504,327 (6 iterations) AIC = 1034,654 BIC = 1100,825		Number of observations = 1,200 Wald chi ^{2} (12) = 91.79 Prob > chi ^{2} = 0.000 R^2 falsification = 0.083			
Independent variables	**Regression coefficient**	**Standard deviation**	**Z**	**(95% confidence interval)**	
Nhankhau	-0.0068	0.0641	-0.11	-0.132	0.119
gioitinh	-0.1995	0.1801	-1.11	-0.552	0.153
hvanchuho	-0.1879**	0.0859	-2.19	-0.356	-0.020
hvancaonhat	0.1848**	0.0842	2,2	0.020	0.350
nghe_nong	-0.1008	0.2248	-0.45	-0.541	0.340
thunhap	0.0443**	0.0200	2.22	0.005	0.084
tietkiem	0.0704	0.0494	1.43	-0.026	0.167
dt_dato	0.0000	0.0002	0.3	0.000	0.000
dt_sxkd	0.0000	0.0000	-0.27	0.000	0.000
chu_sohuu	-1.3711***	0.4073	-3.37	-2,169	-0.573
mien_bac	0.1828	0.2178	0.84	-0.244	0.610
mien_trung	-0.4517**	0.2304	-1.96	-0.903	0.000
cons	2,3699***	0.6312	3.75	1,133	3,607

Note: ***,**,*: statistically significant at the 1%, 5%, 10% level.

Based on the results table, equation (2) can be rewritten as:

$$ln(\frac{p_i}{1-p_i}) = 2.3699 - 0.1879*hvanchuho + 0.1848*hvancaonhat + 0.0443*thunhap - 1.3711*chu\_sohuu - 0.4517*mien\_trung + u_i \qquad (3)$$

To see the relationship between explanatory variables and the ability of disadvantaged people to access loans, the authors can explain the results obtained as follows:

- *The education level of the household head* is inversely related to the ability to access loans. This can be explained by the fact that: for householders with a high level of education, production and business activities under the direction and management of this person often achieve better results, generating more profits. Additionally, in some cases, the head of household can take advantage of their education and qualifications to pursue careers in high-income areas such as information technology, finance - banking, accounting - auditing, helping to increase revenue to pay for household needs. Therefore, the higher the level of education of the household head, the lower the demand and motivation to access loans for production, business, and consumption purposes.
- *The highest level of education of the household* contributes to improving the household's ability to borrow capital. This result is consistent with studies by Tang [21] that households with higher education levels generally have higher production and business capabilities, alongside more efficient outcomes, often with fewer dependents. The advantages in terms of educational level and production capacity also help them quickly increase their income level, thereby having a fine foundation to promote the expansion of production scale further. Therefore, this group of households has a significant need for loans. Moreover, these advantages make them more confident in applying for credit and more reliable in the eyes of loan officers, thus increasing their likelihood of successfully accessing loans.
- *Income* positively correlates with rural households' ability to access formal credit. The higher the value of this variable, the closer the value of Y is to 1. Income contributes to helping borrowers more easily access credit from the formal sector. Households with high average annual incomes have easier access to formal credit than households with low incomes. One of the conditions for borrowing capital from official credit institutions is the borrower's ability to generate income.

- Ownership of the household's farming land contributes to reducing the ability to access loans from official sources. This is an unexpected but quite interesting result when reviewing the preliminary statistical results for the entire research sample, the authors can explain as follows: *Firstly, it is important to understand that collateralized lending is a traditional banking product, and banks typically approve secured loans when: (i) the loan amount is substantial (from several hundred million - billions of dong), (ii) the customer must demonstrate feasibility within their business production plans, (iii) the customer must provide collateral documents (proving land ownership) with full legal validity.* It is the complexity and complexity of loan procedures (the education level of the majority of surveyed household heads has only graduated from high school), moreover for the majority of households operating in the agricultural sector (accounted for 76 - 84%), the need for loans to meet each production cycle is usually not so high that they have to mortgage their land red books, but instead, households can mortgage their assets. Other personal assets have lower value and simpler paperwork procedures. Additionally, obtaining a large loan requires demonstrating the effectiveness and feasibility of a large-scale production plan that can generate revenue to repay both principal and interest, which is a challenging task. *Secondly,* when proceeding with large loans secured by assets, the bank itself faces numerous risks. For instance, the borrower's actual business performance may not meet expectations due to uncontrollable factors such as natural disasters, floods, fluctuating demand for agricultural products, volatile market prices ("good season, low prices - high prices, bad season"), or unpredictable fluctuations in the market value of real estate. Due to the complexity and risk involved in secured loans for vulnerable individuals, and the significant risks banks face when issuing such loans, land ownership does not necessarily motivate households to borrow.
- Compared to the Northern and Southern provinces, households living in the Central region seem to face many difficulties and disadvantages in the process of accessing loans. This fact is consistent with the hypothesis mentioned above that in the provinces and cities of the North and the South, the climate, soil, technical infrastructure conditions, and accessibility to services are different. High-quality healthcare and education services, close geographical distance to the central area... are basically outstanding, leading to the potential for production and business development as well as colossal household economic efficiency in the area. This contrasts with households in the Central region, where they often have to cope with natural disasters, storms and floods, unfavorable arable land conditions and geo-economic location, not to mention the ability to apply advanced technology. The production capacity of rural people in the Central provinces is still limited compared to other regions... From the above reasons, we can see the current situation of borrowing capital to escape poverty and support the livelihoods of households in this region are often more minor and less exciting. Furthermore, the risks for banks when lending are also extensive.

5. Concluding Remarks and Policy Recommendations

This study provides empirical insights into the determinants of formal credit access among vulnerable rural households in Vietnam a topic of growing relevance as the country aims to strengthen financial inclusion and reduce poverty in underserved regions. By applying a Logit regression model to survey data from 1,200 households across three macro-regions, the paper identifies key socio-economic and geographic factors that influence the likelihood of receiving formal loans. The findings show that while higher household income and the overall highest level of education within the household positively affect access to credit, factors such as land ownership, the education level of the household head, and residence in the Central region tend to reduce this likelihood. These results suggest that credit access is influenced not only by conventional eligibility indicators but also by structural constraints, regional disparities, and borrower-bank relationship dynamics. This study contributes to the literature by highlighting the paradoxical role of land ownership and the nuanced effects of educational attainment on credit access. It also reinforces the importance of considering regional characteristics and borrower profiles in designing inclusive credit policies. For policymakers, this implies the need to move beyond one-size-fits-all lending criteria and to customize financial solutions based on local socio-economic conditions.

However, the research is not without limitations. First, the cross-sectional nature of the data limits the ability to capture causal relationships or changes over time. Second, informal credit dynamics, though mentioned, were not modeled simultaneously with formal credit, which could offer deeper insights into substitution effects or dual-market interactions. Third, while the Logit model is appropriate for binary outcomes, future studies could explore more flexible modeling frameworks such as probit models, multilevel models, or structural equation modeling to capture latent variables and regional heterogeneity more precisely. Future research should focus on longitudinal datasets to assess the impact of evolving credit policies and potentially integrate behavioral factors such as trust in financial institutions or digital literacy. Moreover, expanding the scope to include ethnic minority groups, gender dynamics, or digital credit platforms could provide a richer understanding of exclusion mechanisms in rural credit markets.

In summary, the study underscores that improving access to credit for vulnerable populations requires a multifaceted approach, including regulatory reforms, financial education, regional infrastructure investments, and adaptive credit mechanisms. These findings not only inform policy in Vietnam but also provide a relevant reference point for other emerging economies facing similar inclusion challenges.

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