DETERMINANTS OF MICROCREDIT USING BY POOR HOUSEHOLDS IN THANH HOA PROVINCE

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Abstract: ***The purpose of this paper is to examine determinants of microcredit using by poor households in Thanh Hoa province. Using Binary logistic regression, the result indicates that there are 6 factors that determine the decision to use microcredit of poor households in the studied area. The most influential factor is Perceived usefulness of microcredit, followed by Belief of poor households in microfinance institutions and theirs microcredit services, Social influences, Employee of microcredit institutions, The Relationship between the microcredit providers and poor households, and lastly the Scale of the organizations providing microcredit service. Based on the analysis results, some recommendations are proposed.***

• Keywords: *poor households, decision, microcredit, Thanh Hoa province.*

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Tóm tắt: *Bài viết nghiên cứu các yếu tố tố ảnh hưởng tới quyết định sử dụng tín dụng vi mô của hộ nghèo trên địa bàn tỉnh Thanh Hóa. Sử dụng mô hình hồi quy Binary logistic, kết quả cho thấy, có 6 yếu tố ảnh hưởng đến quyết định sử dụng tín dụng vi mô của hộ nghèo trên địa bàn nghiên cứu. Yếu tố ảnh hưởng nhất là Nhận thức sự hữu ích của tín dụng vi mô, tiếp theo lần lượt là Sự tin tưởng của hộ nghèo vào tổ chức và dịch vụ tín dụng vi mô, Ảnh hưởng xã hội, Đội ngũ nhân viên của tổ chức cung cấp tài chính vi mô, Mối quan hệ giữa tổ chức cung cấp tín dụng vi mô với khách hàng và cuối cùng là Quy mô của tổ chức cung cấp tín dụng vi mô. Dựa vào kết quả phân tích, một số khuyến nghị cũng được đưa ra.*

• Từ khóa: *hộ nghèo, quyết định, tín dụng vi mô, tỉnh Thanh Hóa.*

1. Introduction

Recently, there have been several studies reporting determinants of microcredit using, especially researches conducted in poor countries or poor areas ofAsian and African continent.

For Asia area, study byKausar (2013) found that interest rate, relationship between lenders and borrowers, government policies, gender differences, credit worthiness of borrower, transaction cost, limited access to credit, economic condition and the availability of information impact on demand for microcredit in Pakistan.For China,using logistic regression, study by Li, Gan, and Hu (2011) pointed out that the rural households' accessibility to microcredit is affected by factors such as educational level, household size, income, interest rates, loan processing time.Another study by Ming Qinet al (2019) about factors affecting use of microcredit for Chinese economy showed that guarantee group membership, village head loan guarantee, and messenger use as well as popular factors such as social capital, production cost, non-labor family members, income have significant impact on demand for microcredit among farmers among farmers in Northern China.

Considering studies for the Africa area, Umoh (2006) expressed that the access to microcredit for Nigeria's Economy is depended on collateral security, loanprocessing procedures, interest rates and income. Another study for Nigeria by Anyiro and Oriaku (2011) indicated factors influence access to microcredit are age, education, farm income, extension contact and distance between home and loan source.For the case Sudan, Ibrahim and Bauer (2013) showed that savings, value of assets, and incomes are significant variables for determining the credit constrained

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conditions. For the agricultural area in Ghana, the study by Anang et al (2015) revealed that gender, household income, farm capital, improved technology adoption, contact with extension, the location of the farm, and the awareness of lending institutions are factors that influence access to microcredit.

For Vietnam, Barslund and Tarp (2008) investigated rural credit in four different provinces of Vietnam as: Long An in the Mekong Delta, the South of Vietnam, Quang Nam in the Central Highlands, PhuTho in the North Western; and Ha Tay in Red River Delta, now part of Hanoi, the capital of Vietnam. The findings showed regional differences in the demand for microcredit, but in general age of the household head, the number of adults, education, and the distance between home and loan source affect access to microcredit. Another study by Phan Dinh Khoi (2013) about factors affecting access to formal credit and informal credit of the farm households in the Mekong Delta. The findings expressed factors affecting the decision to use credit services are Level of income, Administrative works, and being a member of loan groups. For An Giang, the province located in the Mekong Delta, a study by Tran Ai Ket and Huynh TrungThoi(2013) examined the factors affecting farmers' access to formal credit. The analysis result indicated that household income, household head's status, loan purpose, and asset value affect to decision to use formal credit. Moreover, a study about factors affecting the accessibility of formal credit in KienGiang province by Truong Dong Loc and Tran Ba Duy (2010) shown that the accessibility is positively correlated with the age of household head, what level of educational qualifications they hold, the number of household members, and total assets of the household. Conversely, household land size and household income have a negative influence on credit accessibility.

Regarding the North, a study by Nguyen Quoc Oanh and Pham Thi My Dung (2010) pointed out that household characteristics, including age, social standing, loan procedures affect farmer households' access to formal credit in the suburbs of Hanoi. Furthermore, Nguyen Phuong Le and Nguyen Mau Dung (2011) shown that household characteristics such as education and gender of the household head, economic status of household, loan procedure, lending interest rate, loan tenor, loan amount and employee enthusiasm of credit institutions affect household' accessibility to formal credit in suburb of Hanoi.

Thanh Hoa is one of provinces with the highest number of poor households in Vietnam and microfinance service providers in the province also play an important role in poverty reduction in recent years. References to the previous research shown that they have focused on investigating factors affecting farmers' accessibility to credit from banking institutions, factors influencing access to microcredit by poor households seem not to attract the attention of researchers in this research area, and to the best of our knowledge, there has not been any research on the factors affecting the decision to use microcredit of poor households in ThanhHoa province. The paper,therefore, attempts to investigate this issue.

The rest of the paper is organized as follows. Section 2 presents the method. Section 3 expresses results. The following section discusses and concludes the paper.

2. Methodology

2.1. Research model

The logistic model is formulated to identify factors affecting poor households' decision to use microcredit service. The model takes the form:

$$Y = \beta_0 + \sum_{i=0}^{n} \beta_i X_i + u \qquad (1)$$

Where: Y = dependent variable, Y has values either 0 or 1.

X_i = independent variables

= parameter

u = residuals

According toCox and Snell (1989), Binary Logistic Equation (1) can be rewritten as follows:

$$Ln\left[\frac{P(Y=1)}{P(Y=0)}\right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n \qquad (2)$$

Where P(Y=1) = P_0 is the probability of poor households' decision to use microcredit

and P(Y=0) = (1-P_0) is the probability of poor households' decision not to use this service.

To identify factors that contribute the microcredit' accessibility of poor households in ThanhHoa province, based on previous studies such as the Theory of Planned Behavior(Ajzen, 1991),a study byRicci and Caratelli (2014),and a research byFrangos et al (2012) we proposed model is expressed as follows:

$$Ln\left[\frac{P(Y=1)}{P(Y=0)}\right] = \beta_0 + \beta_1 PU + \beta_2 EU + \beta_3 BL + \beta_4 SO + \beta_5 CR + \beta_6 EP + \beta_7 SI \quad (3)$$

Where: PU denotes Perceived Usefulness; EU represents Easy to Use (microcredit Service); BL stands forBelief (the trust of poor households in microfinance institution and its microcredit service); SO refers toScale of organizations offering microcredit to poor borrowers; CR implies theRelationship between the microcredit providers and poor households; EP indicates Employee of microcredit institutions and SI: Social influence

The main hypotheses to be tested in this study:

Hypothesis H1: The factor "PU" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H2: The factor "EU"has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H3: The factor "BL" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H4: The factor "SO" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H5: The factor "CR" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H6: The factor "EP" has a positive impact on "the decision to use microcredit services of poor households".

Hypothesis H7: The factor "SI" has a positive impact on "the decision to use microcredit services of poor households".

2.2. Data

The data used in this study is extracted from the database in the study by Le Huy Chinh (2019) that assesses the impact of microfinance services on income and consumption of poor households in Thanh Hoa Province. The data includes 466 valid survey questionnaires made by the convenient sampling method. Data analysis is performed by the SPSS 20 software.

3. Results

The results of Omnibus Tests

Table 1 shows Omnibus Tests of Model Coefficients.

Table 1. Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
	316.821	7	.000
Block	316.821	7	.000
Model	316.821	7	.000

Source: analyzed by author

It can be seen that Chi-square = 316.821 and Sig. = 0.000 < 0.05. It implies that the overall fit (variance explained) of the model.

The results of Testing the Fit of the Logistic Regression

Table 2 displays the results ofTesting the Fit of the Logistic Regression with Log likelihood, Cox&Snell square and Nagelkerke square with its values, respectively.

Table 2: Testing the Fit of the Logistic Regression

-2 Log likelihood	Cox & Snell R^2	NagelkerkeR^2
77.491	.493	.864

Source: analyzed by author

The value of Log likelihood expresses that the estimated model fits the data. Cox & Snell R2 = 0.493 and Nagelkerde R2 = 0.864 indicate 86.4% the proportion of variance in the outcome that the model successfully explains.

Regression analysis testing

Table 3 expresses the regression coefficients.

Table 3: Regression analysis results

	Variable	B	S.E	Wald	Df	Sig.	Exp(β)
Step 1	Constant	-20.224	3.288	37.828	1	.000	.000
	PU	2.585	.652	15.718	1	.000	13.265
	EU	.695	.449	2.399	1	.121	2.004
	BL	1.982	.630	9.902	1	.002	6.875
	SO	1.138	.526	4.673	1	.031	3.120
	CR	1.530	.526	8.461	1	.004	4.620
	EP	1.581	.589	7.190	1	.007	4.858
	SI	1.853	.780	5.643	1	.018	6.377

Source: analyzed by author

The Wald tests imply that with the exception of the EU variable, the coefficients have the expected signs and are statistically significant. The Binary logistic regression equation is

$$\frac{P\,(Y=1)}{P\,(Y=0)}] = -20{,}224 + 2{,}585PU + 0{,}695BL + 1{,}138SO + 1{,}530CR + 1{,}581EP + 1{,}853SI \quad (4)$$

The model on the whole is well specified and various points can be made.

Firstly, when the awareness of the usefulness of microcredit services increases, the poor are more ready to use this service. The coefficient of PU variable is 2.585, it indicates PU increases by 1 unit, while other factors are constant, the l*og* of proportion of probability between deciding to use microcredit services and not to use increases by 2.585 units. In other words, the probability of deciding to use microcredit services increases by 13.265 times ($e^{2.585}$) compared to the probability of not using the services of poor households.

Secondly, when the poor have trust in microfinance services and the organizations, they are more willing to use microcredit services. The estimated results can be interpreted that probability of deciding to use microcredit services increases by 6.875 times ($e^{1.928}$) compared to the probability of not using the services of poor households.

Thirdly, the scale of the organizations that provide microcredit services increases, poor households' desire to use these services become greater. The analysis of estimated results suggests that probability of deciding to use microcredit services increases by 3.120 times ($e^{1.138}$) compared with the probability of not using these services of poor households in ThanhHoa province.

Fourthly, the relationship between the microcredit institutions and poor households has a positive impact on decision making for using microcredit services. The estimated result points out that the probability of poor households' decision using this kind of services increases 4.620 times ($e^{1.530}$) compared to the probability of not using microcredit services.

Fifthly, the estimated results shows that the better staff microfinance organizations have, the more ready poor households are to decide to use microcredit services. In the same way, analysis of the results obtained indicates the probability of poor households decide to use microcredit services increases to 4.858 times ($e^{1.581}$) compared to the probability of not using the services.

Finally, constructive social factors have a positive influence on poor households' decision to use microcredit services. Estimated result implies that the probability of poor households' decisions using microcredit services increases 6.377 times ($e^{1.853}$) compared to the probability of not using the services.

The impact levels of influential factors affecting the decision to use microcredit service is shown in Table 4

Table 4: The impact levels of influential factors

Hypotheses	Independent variable	β	e^{β}	The impact levels	Conclusion
H1	PU	2.585	13.265	1	Accepted
H3	BL	1.982	6.875	2	Accepted
H4	SO	1.138	3.120	6	Accepted
H5	CR	1.530	4.620	5	Accepted
H6	EP	1.581	4.858	4	Accepted
H7	SI	1.853	6.377	3	Accepted

Source: analyzed by author

It can be seen that all hypotheses are accepted and the impact levels of influential

factors affecting the decision to use microcredit services, in order of decreasing, are Perceived usefulness, Belief in microfinance institutions and its services, Social factors, Employeesof organizations, the Relationship between customers and the organization, and the Scale of the organizations providing microcredit.

4. Discussion and conclusion

The purpose of this paper is to examine the factor affecting poor households' decision on using microcredit services in ThanhHoa province. The result indicates that there are 6 factors affecting the decision to use microcredit services of poor households in ThanhHoa province, namely: Perceived Usefulness of microcredit services; Belief of poor households in microfinance institutions and theirs microcredit services; Social influences; The relationship between the microcredit providers and the customers; Staff and Scale of the organizations providing microcredit service.

Based on the analysis results, some recommendations are proposed for organizations providing microcredit service in Thanh Hoa province, as follows: i) Microfinance institutions should strengthen and convey quickly information about the microcredit services can bring benefits to poor households. Because Perceived usefulness of microcredit services has the strongest influence on poor households' decision of using microcredit services; ii) Microfinance institutions should improve service quality, image brand and reputation to generate more trust in order to attract more poor households; iii) Developing effective customer service policies; iv) Improving the quality of human resources in microfinance institutions; v) Expanding transaction networks of microfinance institutions throughout ThanhHoa Province.

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