DETERMINANTS OF ACCESS TO CREDIT BY THE SMALL BUSINESS AT BINH THUY DISTRICT, CAN THO CITY, VIETNAM

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Abstract

This paper investigates the *"Determinants of households' business access to bank credit in Binh Thuy district, Can Tho city"* which is performed by using the method of directly interviewing 240 business households in 8 wards in Binh Thuy district. By using the Logistics models, the finding show that the access to credit by small business households are significantly affected by education level of householders, capital of household businesses, collateral and income of businesses household. In addition, based on given results, possible solutions to improve the access to credit for business households at Binh Thuy district, Can Tho city have been considered.

Keywords:

access to credit, Logistics, small business

1. Introduction

The innovation of small and medium sized enterprises (SMEs) has long been considered as vital nuclear for industrialization and thus crucial for the broader development missions. It is reported that SMEs play a significant role in employment and wealth creation and as a result many countries have implemented various programmes for encouraging growth of SMEs. Mullei (2003) indicated that it is nothing that SMEs have become the "backbones of most economices as they serve as seedbeds for enterpreneurship, create new jobs and provide innovation and technological development.

In the past years, the production of business of individual households in Vietnam has a lot of advantages from the procedure of establishing business units to reform this object's tax management in the form of securities , do not need to file invoices, book notes... has facilitated the personal business households to thrive. According to total statistics, as of the year 2014, the country has a total of 4,658 million individuals with a workforce of nearly 8 million people. In the large number of islands, the type of production of business is abundant, available throughout the country, the individual business households have been affirming the role as well as effective contributions to the development of the country. Capturing the needs of business households as well as increasing the competitiveness, banks have deployed the type of credit for business households, a potential market and promising a lot of profit so that the exploitation of this market will help the households more profitable, dominate the market.

Can Tho is one of five centrally located cities, situated at the center of the Mekong Delta. The expansion of the loan to business households encountered a lot of difficulties due to small borrowing, high-service costs, the possibility of major risk. With the industrialization and modernization advocates, the demand for business households is increasing, the bank's business operations in the field of business households are more risky. Therefore the extension of Bank credit must accompany the enhancement of substance safety. Having such a new business operation of the bank actually became leverage to promote the development economy. As given issues, investigating the "determinants of access to credit by small business at Binh Thuy district, Can Tho City of Viet Nam" is really needed.

2. Theoretical framework

"Life Cycle Model" suggested by Modigliani (1996) are considered in analyzing the demand for credit and the factors affecting demand. In developing economies, the individual consumption could not be offered at an acceptable level. With the uncertainty and change in family size, a household's intertemporal consumption patterns are various. The life cycles theory argued by Morduch (1995) suggested that the households'

consumption are satisfied by reallocating their incomes over their life time to maximize their utility given the budget constraint. The households' consumption can be satisfied by using the saving from the past income or investment but impossible using the future income in the present sice it is not realized. Therefore, it is significant for the households who needs to relax their consumption, to access an account that can act as intertemporal intermediary between the future lender and the present borrower. This account is consumer credit or borrowing. The credit enables individual households to make intertemporal choice and become additional spending power in the present in exchange for repayment in the future (Soman & Cheema, 2002).

In addition, the demand for credit is also illustrated in the theory of investment. The entities maximize utility subject to the production function. They need the flow of output, labor and capital accumulation. Though firms know that there is profitable investment opportunity, they do not do that since their saving is hardly obtained (Jorgenson, 1967). Thus, they will invest rather than using credit which later depends on the cost of the capital and the expected rate of return (Modigliani and Miller, 1958). In short, the firm will invest on a certain project provided that the investment on the project raises the market value of the firm's shares.

Furthermore, the demand for credit is also associated with the production function of certain firm. In Cobb-Douglas production function theory, firms need to maximize their profit from production. Regarding to this theory, the labour and capital given technology lead to the successful of production (Zellner et al., 1966). The Cobb Douglas studies how production is influenced by these significant two factors of production, labour and capital, and how their variation change the income distribution (Felipe and Adams, 2005). This capital can be offered from credit at different cost of capital.

In short, the theories give us an overall picture to investigate the determinants of access to credit by small business at Binh Thuy district, Can Tho city of Viet Nam. In order to reach certain objectives, a review of previous studies related on determinants of access to credit by the individual households needs to be considered.

3. Previous studies

Empirical studies suggest that access to credit by are significantly affected by various variables. Firstly, income of the households may influence on the probability of access to credit by them. This was supported by Johnson and Morduch (2007), Diagne (1999), Bhuiya et al (2001) and Marge Sults (2003). The households with more wealth

represented in terms of households' assets, size of land and number of livestock are found to have greater access to credit. Another findings that more resource endowment increase the probability of access to credit by Bali Swain (2002). In addition, Age and Educational lvel appeared to affect in credit access in informal credit markets that discussed in the study of Zeller (1994) and Marge Sults (2003). In term of age, the study argued that person falling between 26-35 years are more constrained than those less than 2 years of age.

The gender of households head is also considered as determinants of access to credit. In fact, Mayada et al (1994) suggested that women are especially discriminated against in informal financial markets. However, gender appreared to have no influence on the access to credit (Zeller, 1994). In addition, Navajas and Tejerina (200) indicated that access to credit can also be affected by high service costs.

Table 1: Expected Effects from theory

Variable	Description	Expected Sign	Explanation
Income	Proxied using expenditure/Main economic activity that generates income	Positive	Transitory changes in income affect consumption (Campel and Mankiw, 1989)
Age	Age of respondents in years	Positive	Access at intermediate age is higher (Zeller, 1994)
Level of Education	This is measured using highest education level attained	Positive	The higher the education, the higher the demand (Zeller, 1994)
Gender	1-Male (reference dummy); 0 – Female	Negative for women	Women are discriminated against (Mayada et al, 1994)
Age-Gender	Random selection of age category and gender	Positive	Likely to be positive for intermediate aged males (Zeller, 1994, Mayada, 1994)

Marital status	1-Single (reference dummy); 0: otherwise	Positive	Based on the household constitution
Household size	Number of family members in household	Positive	More labour available in a household improves family business (Marge Sults, 2003)
Distance from credit source	Captured using duration to the nearest financial service provider	Negative	Despite being close to credit source, households were still rationed (Johnson and Morduch, 2007)

Empirical models

Based on theoretical model and empirical studies, this part illustrates the empirical model for the determinants of access to credit by small business at Binh Thuy District, Can Tho city of Vietnam.

$$\log_r\left[\frac{P\,(Y=1)}{P\,(Y=0)}\right] = \beta_0 + \beta_1 X_1 + \beta_2\,X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where:

Y is dependent variable that reflects the accessibility of credit. The households were appraised before lending the money, so applicants are often affected by this process to access credit capital credit at commercial banks. This variables is 1 when business households are access to credit, and 0 otherwise.

X1: Gender of householder (1 = male, 0 = female), the gender difference of the householder also affects the official credit access capacity of households. The owners are men who have access to credit institutions more than the female householder, as males are often more boldly in the production of the investment in business. In addition, women are faced with cultural barriers, the importance of the male horizon is still prevalent in Southeast Asian countries as well as in our country, the status of the woman is often not respected.

X2: The education level of the household, is continuous variables, reflecting the number of years to the owner's schooling. The academic level of business owners has a positive influence on the ability to access the official credit

sources of households. This β coefficient is expected to be of positive sign.

X3: households' capital (million VND) is the households' investment for the business. This variable has a positive expectation with the official credit accessibility of households. The capital includes investments in business operations such as buying business land, buying machinery, equipment for business production, purchasing goods, supplies,... Households with high business capital are highly visible to the large scale of operation. Higher business capital will directly influence the bank's loan appraisal for business households.

X4: Collateral (million VND) hold by the households are considered as the collateral in credit access. Most of the households' loan are crucially based on the guaranteed assets. Therefore, the greater the collateral value is the higher the probability to access the loan. Therefore, this factor has influenced the possibility of borrowing the credit of the household, which is expected to be correlated with the possibility of access to banking capital.

X5: Average income (VND million/month) is measured by the total average money earned by the households in one month. The high income households tend to expand production and farming activities that requires more credit. The income sources of the households are mainly considered in the loan contract meaning that higher income households may lead to higher possibility of credit access. The coefficient of this variable is positively expected.

Table 2: Expected sign of the empirical model

Variable	Description	Sign
Gender	1-Male (reference dummy); 0 – Female	+
Education Level	This is measured using highest education level attained	+
Household capital	The households' investment for the business	+
Collateral	This variable is considered as the collateral in credit access	+
Income	The total average money earned by the households in one month	+

4. Results and Discussions

4.1. Descriptive statistics of the sample:

Table 3 illustrates the descriptive statistics of the observation in the study. In 240 observations, 202 households are gathered as the borrowers of the bank. The average number of person in one households is mostly 2 persons. The average age and farming experience of the households's head are 38 years and 4,5 years, respectively. Most of the households' head have 12 years of schooling.

In addition, as a collateral, equity and collateral hold by the households are relatively high value that are average of 165 millions VND and 328 millions VND.

Table 3: Descriptive statistics the observations

Items	Unit	Value
Observations	Household	240
Borrower	Household	202
Age of respondant	Year	37,52
Gender of the respondant	%	48,75
Education level	Year	11,79
Experience	Year	4,51
Household size	Person	1,75
Households' equity	Million VND	165,32
Monthly Income	Million VND	10,19
Collateral	Million VND	328,32

Source: Survey by authors in 2017

4.2. Determinants of access to credit by the small business at Binh Thuy district, Can Tho city, Viet Nam

To analyze the factors affecting the ability to access credit of small business households in the area of Binh Thuy District, Can Tho city, the paper uses the Binary Logistic model. In particular, variable dependency Y is variable reflecting accessibility of credit, variable valued at 1 when business households have bank loans, and 0 otherwise. According to the proposed research model, there are 5 independent variables including gender, education level, assets, collateral and income that are said to be able to impact credit capital accessibility. The result found that there are 4 variables that affect the credit accessibility of small business households.

Table 4: Determinants of access to credit by small business at Binh Thuy district, Can Tho city, Viet Nam

Variable	Hệ số β	Exp(B)	Mức ý nghĩa Sig
Gender	-1.381^{ns}	0.251	0.276
Education level	0.632^{*}	1.882	0.001
Assets	0.019^{**}	1.019	0.011
Collateral	0.012^{**}	1.012	0.005
Monthly Income	0.350^{**}	1.420	0.071
Constant	-10.182	0.000	0.000
Observations			240
Prob.			0.000
-2Log likelihood			27,209

Notes:***, **, * significant at 1%, 5% và 10%; [ns]:Not significant.

Source: Surveyed by author in 2017

The findings suggest that four variables affect on the access of credit from the business of the household. These are Education level of household. The resulting regression suggests that the education level variable is affecting the access of credit for households at the 10% meaning and the approximate parameter estimates are the same as the original expectation, bearing the sign. In particular, when an academic level rises to a class, the ability to gain business from a bank has increased 0.632. As higher as the master's study, the increased credit accessibility of the household is increasing. The quality of human resources is evaluated partly through the academic level of the labour. The higher level households will be able to capture credit information as well as the application process for borrowing capital should be highly capable of borrowing. This provides high probability for the households to access credit. This result confirms for previous studies of Johnson and Morduch (2007), Diagne (1999), Bhuiya et al (2001) and Marge Sults (2003).

The coefficients of assets and collateral of the household indicate that access to credit by the small business is positively significantly affected by both of the given variables at 5% level. The findings imply that as the assets has increased to VND 1 million, the probability of access to credit by the small business from the bank's capital is increased tofrom 1,2% to 1,9%. In fact the bank have appraised the assets whose salvage value may contribute to the failure of the business activities of the household. This assets also enables the households to confront the cumbersomes from the economic environments such as operation losses, risks, market fluctuations. As a result, the possesed assets persist the small business to improve production efficiency, maximize profits, generate revenues to repay the loan to the bank. The finding is familiar with other studies previously such as Johnson and Morduch (2007), Diagne (1999), Bhuiya et al (2001) and Marge Sults (2003). The positive coefficient of the collateral variable reinforces the theoretical argument that collateral can serve to mitigate some of the consequences of asymmetric information (Bardhan and Udry, 1999).

In addition, households' monthly income are positively significantly influence on the access to credit of the small business at 5% level. This variable illustrates the positive correlated with the access to credit by the small business meaning that as the monthly income of the households increase in 1 million VND thus the possibility of access to credit can be increased in 35%, other things constants. In fact, one of the conditions to borrow the capital from the bank is the ability to generate income by the borrower. This is the criterion for evaluating the effectiveness of the business plan. The business households are often considered by the bank officer in the term of income generated that can be used to repay the loan. Thus the income affects the accessibility of business households when taking loan. This finding confirm for the

studies of Johnson and Morduch (2007), Diagne (1999), Bhuiya et al (2001) and Marge Sults (2003).

There is insufficient evidence that the gender variable affects the banking credit accessibility of the household business. This confirms for the present credit procedure and for the previous studies. In the evaluation of the lender, the bank is not interested in the gender of the client and in the loan policy nor does it look to gender issues.

4.3. Possible solutions to improve the credit accessibility:

For credit institutions

+ The small business households are facilitated in credit process such as relaxing the loan process, reducing procedures, cutting out unnecessary paperwork for loan records. Especially the time processing resumes should be shorted to facilitate individual business households easily accessible loan sources. The loan policies also need to conform to the business and flexibility of borrowing time as well as mortgage properties. As a result, a new personal business household that has access to preferential capital, further expanding business production, applied science and technology to improve operational efficiency. In addition, the small business household are advocated to use reasonable capital and to build up the proper project.

+ The conditions and credit procedures need to be carefully considered by the credit institutions such as restructuring loan duration and loan size that match the production cycle to ease the customers' repayment. Besides, the clients need to be considered in terms of low probability of repayment through the specific policies of the credit institutions. These are reducing interest rates, not collecting overdue interest, returning the principle before interest.

+ The credit products are actively designed to dedicate the business households such as loan conditions and flexible interest, improving the economic environment and the law to create more favorable opportunities for credit activity. Specifically for those who have insufficient collateral for access to bank funds, another product for them needs to be considered by the bank.

For the small business households

+ Firstly, the households' ability and experiences as discussed in the findings have to be enhanced to adapt the quickly changing in technology. The households should actively learn the business methodology by multi-media communication. This enables the households easily to reach their business mission, to access to credit and to repay the loan in time. As a result, good relationship between lenders and borrowers is gradually improved.

+ Secondly, good managing the finance and capital leads to better profit for the households. In addition, good business planning is also considered by the bank in credit process. Therefore, high probability of access to credit is associated with two given issues.

+ Thirdly, in terms of prestige, the loan need to be used in proper purpose as promised in loan contract rather than personal purposes. However, if the loan is not put into right place, the operation of the business household may fail in loan repayment. It is therefore affecting the accessibility of business households at the following times.

+ Fourth, in the context of economic integration, the production of small-scale, lack of links such as the individual business households in Vietnam will now be difficult to compete. Therefore, it is necessary to have the link between individual business households together into the industry associations as well as between the main business of individuals with the market. Business households should convert the operating model to a larger scale and abundant of financial resources.

5. Conclusions and Recommendations

5.1. Conclusions:

The paper investigates the determinants of access to credit by the small business households in Binh Thuy district, Can Tho city of Viet Nam. Data used in the paper were collected from 240 households in given location. By using the Binary Logistics, the findings found that the education level of households' head, assets hold by the households, collateral and average monthly income of the households are positively significantly affecting on the access to credit of them. Besides, the probability of access to credit by the households are partly contributed by the officer's behavior. Therefore, to improve the credit accessibility, all households' characteristics and other factors studied need to be carefully considered.

5.2. Recommendations

Due to the significant role play of access to credit to themselves the households and the economical issues, following are possible recommendations:

5.2.1 Binh Thuy district people committee

+ The various training coureses related to households are regularly hold by the Binh Thuy district people committee these are managing courses, business administration, upgrade new knowledge, regulation on taxation. In addition, technology sciences transfer class allows the households to apply in production and business more efficiency.

+ It is significant to focus on the public sides throught the transperency and benefitable projects that enables the credit institutions to invest in their short and long terms objectives. In addition, the production unions for the households in this area will be established that may collect

the small business to explore the benefit from scale of economics.

+ Local government organizes programs to meet three parties these are local authorities, credit institutions and business households in order to help credit institutions determine the capital needs as well as loan purposes of business households to plan lenders accordingly. On the other hand let the business households grasp the information explicitly, specifically the existing loan incentive program for business households to have the expansion project produce a more efficient way.

5.2.2 For others departments related

+ To develop the credit market, the small business households are mainly facilitated to improve the official credit access to be invested with a reasonable cost to invest in the production, improvement of income and local economic development.

+ To annouce the information and to simplify the credit procedures on credit institutions and credit services to the small business households through the good cooperation between the local government and credit institutions.

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References

Bali Swain, R. (2002). Credit Rationing in rural India. Journal of Economic Development, Vol. 27, No. 2, pp. 1 - 20.

Campbell, J. & Mankiw, G. (1989). Consumption income and interest rates: Reinterpreting the time series evidence. O. Blanchard and S Fisher (eds) NBER Macroeconomic Annual. MIT Press, Cambridge.

Diagne, A. (1999). Determinants of access to and participation in formal and informal credit markets in Malawi. International Food Policy Research Institute, FCND, Discussion Paper No. 67, Washington D.C.

Felipe, J and Adams, F. (2005). "The Theory of Production": The Estimation of the Cobb-Douglas Function": A Retrospective View. Eastern Econometric Journal, 31(3).

Johnston Jr., Don, & Jonathan Morduch (2007). The unbanked: Evidence from Indonesia. New York: Financial Access Initiative.

Jorgenson, D. (1967). The Theory of Investment Behavior. Business (Vol. I, pp. 129-188).

Marge Sults, (2003). Banking sector development and credit constrained households in Estonia.

Mayada M. Baydas, Richard Meyer & Nelson Aguilera-Alfred, (1994). Discrimination against women in formal credit markets: Reality or rhetoric. World Development, Vol. 22, No. 7, pp 1073-1082.

Modigliani, Franco and Miller, M. H. (1958). The American economic. The American Economic Reveiw, 48(3), 261-297.

Modigliani, Franco. (1966). The Life Cycle Haypothesis of Saving, the Demand for Wealth and the Supply of Capital, 33(2).

Morduch, J. (1995). Income Smoothing and Consumption Smoothing. The Journal of Economic Perspective, 9(3), 103-114.

Mullei A. (2003), Growth and Transformation of Small Manufacturing Firms in Africa: Insights from Ghana, Kenya and Zimbabwe, African Center for Economic Growth, Nairobi.

Navajas, Sergio, & Luis Tejerina, (2006). Microfinance in Latin American and the Caribbean: How big is the market? Washington, D.C.: Inter-American Development Bank.

Soman, D., & Cheema, A. (2002). The Effect of Credit on Spending Decisions: The Role of the Credit Limit and Credibility. Marketing Science, 21(1), 32-53. doi:10.1287/mksc.21.1.32.155

Zeller, M. (1994). Determinants of credit rationing: A study of informal lenders and formal groups in Madagascar. World Development, Vol. 22, No. 12, pp 1895–1907.

Zellner, Kmenta, A and Dreze, J. (1966). Specification and Estimation of Cobb-Douglas Production Function Models. Econometrica, 34(4), 784-795.